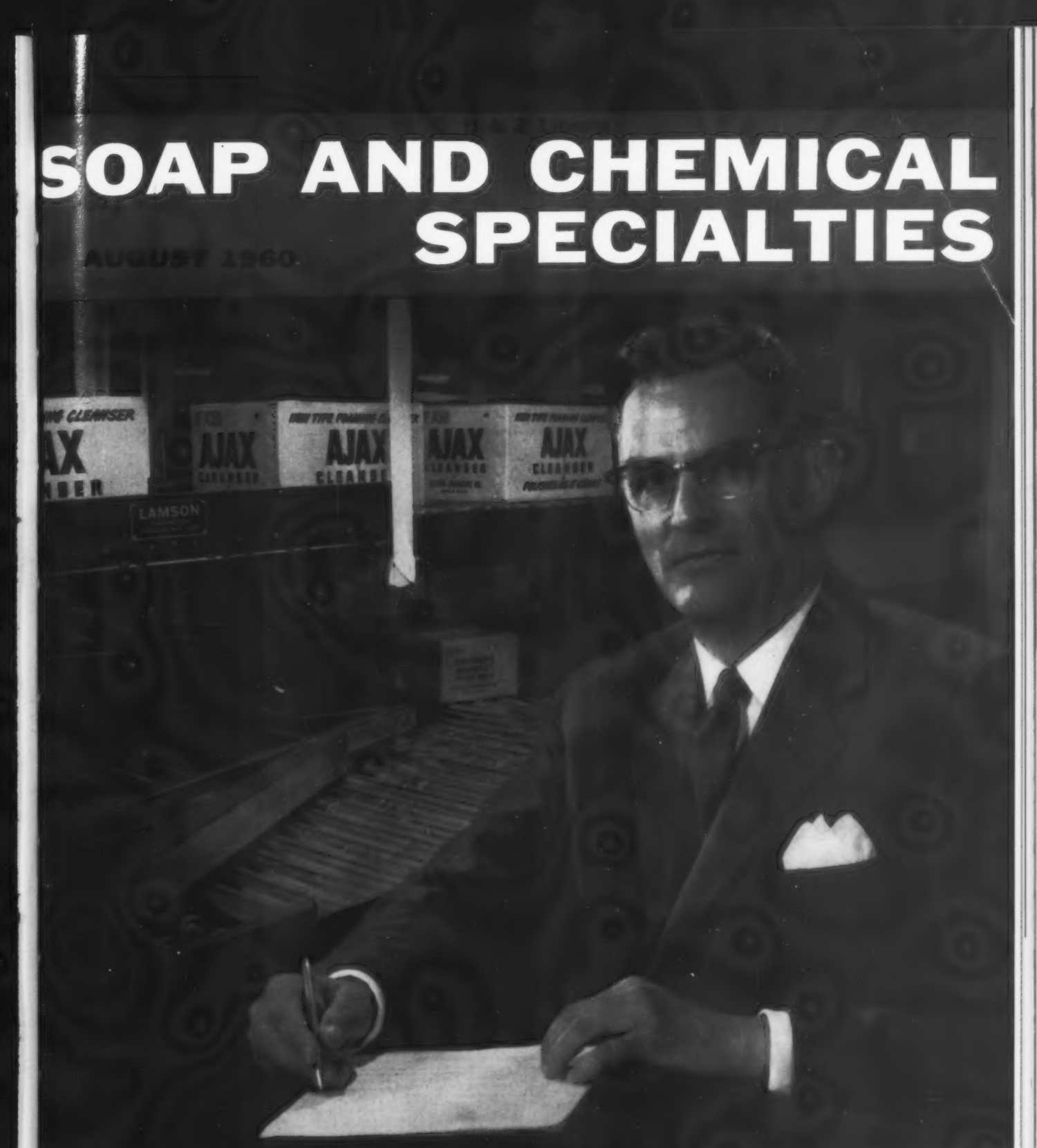
SOAP AND CHEMICAL SPECIALTIES

AUGUST 1960



IN THIS ISSUE

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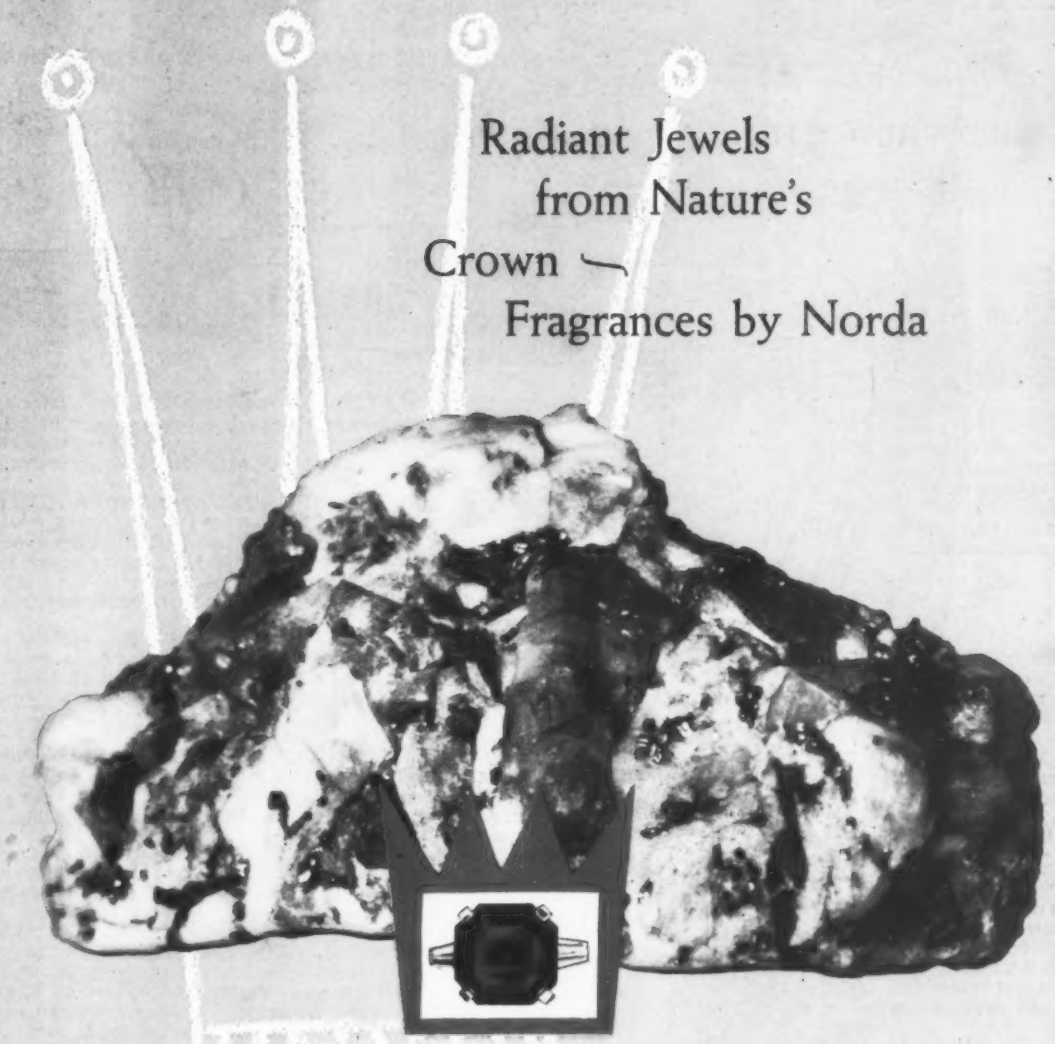

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WATER EMULSION WAXES

Each of Candy's floor waxes are all-around top quality for certain traffic conditions. They impart the finest protection and beauty to floors for which best suited.

CANDY'S SUPREME (standard)
BRIGHT BEAUTY®
CANDY'S SUPREME Special WR
SUPER CAND-DOX®
CAND-DOX® #CS
CANDI-WAX #6000

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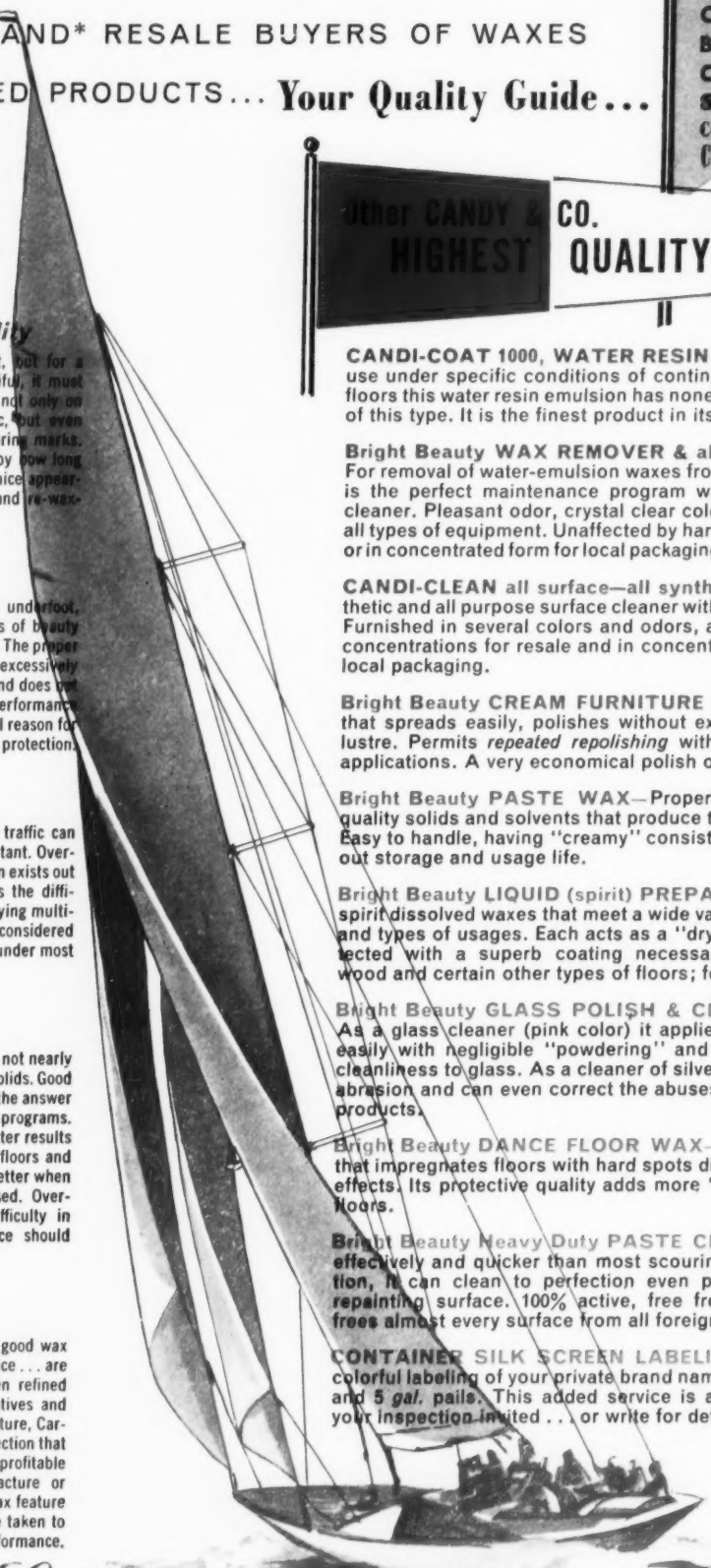

Beauty and Durability

Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to abrasion of traffic, but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

Anti-Slip

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax—beauty and protection.

Water Resistance

Frequent damp mopping or wet traffic can make water resistance very important. Overdoing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

Solid Content

The percentage of solid content is not nearly as important as the **quality** of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Overwaxing and resultant greater difficulty in removal for periodic maintenance should be avoided.

Carnauba Wax

The most important features of a good wax . . . all-around quality of performance . . . are built around Carnauba Wax. When refined and compounded with other additives and scientifically controlled in manufacture, Carnauba imparts the beauty and protection that makes the use of floor waxes both profitable and possible. Make-shift manufacture or over-emphasis on any one given wax feature should be avoided and proper care taken to provide for most satisfactory performance.

CANDI-COAT 1000, WATER RESIN EMULSION—As a floor coating for use under specific conditions of continued maintenance on certain types of floors this water resin emulsion has none of the faults associated with coatings of this type. It is the finest product in its class produced up to this time.

Bright Beauty WAX REMOVER & all-purpose SURFACE CLEANER—For removal of water-emulsion waxes from any floor without harmful effects. It is the perfect maintenance program wax remover and all-purpose surface cleaner. Pleasant odor, crystal clear color and thorough cleaning action with all types of equipment. Unaffected by hard freezing. Furnished ready for resale or in concentrated form for local packaging . . . nothing but water to buy or mix in.

CANDI-CLEAN all surface—all synthetic CLEANER—This is an all synthetic and all purpose surface cleaner with free rinse and free wipe off qualities. Furnished in several colors and odors, and properly priced. Available in two concentrations for resale and in concentrated form for dilution with water for local packaging.

Bright Beauty CREAM FURNITURE POLISH—A cream furniture polish that spreads easily, polishes without excessive effort to a deep impressive lustre. Permits *repeated repolishing* with a dry cloth, thus saving many re-applications. A very economical polish of the very highest quality.

Bright Beauty PASTE WAX—Properly blended and refined from excellent quality solids and solvents that produce the best drying time and evaporation. Easy to handle, having "creamy" consistency and stability that lasts throughout storage and usage life.

Bright Beauty LIQUID (spirit) PREPARED WAXES—A complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each acts as a "dry cleaner" to keep surfaces wax protected with a superb coating necessary for many applications such as wood and certain other types of floors; for bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH—As a glass cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanliness to glass. As a cleaner of silver, it polishes to a high lustre *without* abrasion and can even correct the abuses of scratchy "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX—Does not "ball-up" and gather dirt that impregnates floors with hard spots difficult to remove . . . free from dusty effects. Its protective quality adds more "floor-years" to expensive ballroom floors.

Bright Beauty Heavy Duty PASTE CLEANER—*Cleans* and *scours* more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive qualities, it frees almost every surface from all foreign matter.

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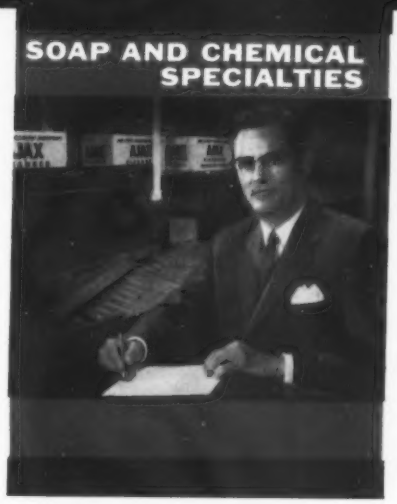
Vol. XXXVI, No. 8, August, 1960

Cover photo: George H. Lesch, a 28-year veteran of Colgate-Palmolive Co., New York, becomes chief executive officer of the firm by virtue of his election as chairman of the board, July 14. In April of this year he was named president. In his new post he succeeds E. H. Little, who retires after 58 years with the detergent, soap, toiletries and chemical specialties producing firm.



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Likewise, our new Amidox series of ethoxylated alkylolamides is a happy marriage of the best properties of two popular families of surfactants. Ninol alkylolamides are foam boosters and viscosity builders. Stability toward strong alkalis and longer shelf are added when these alkylolamides are ethoxylated.

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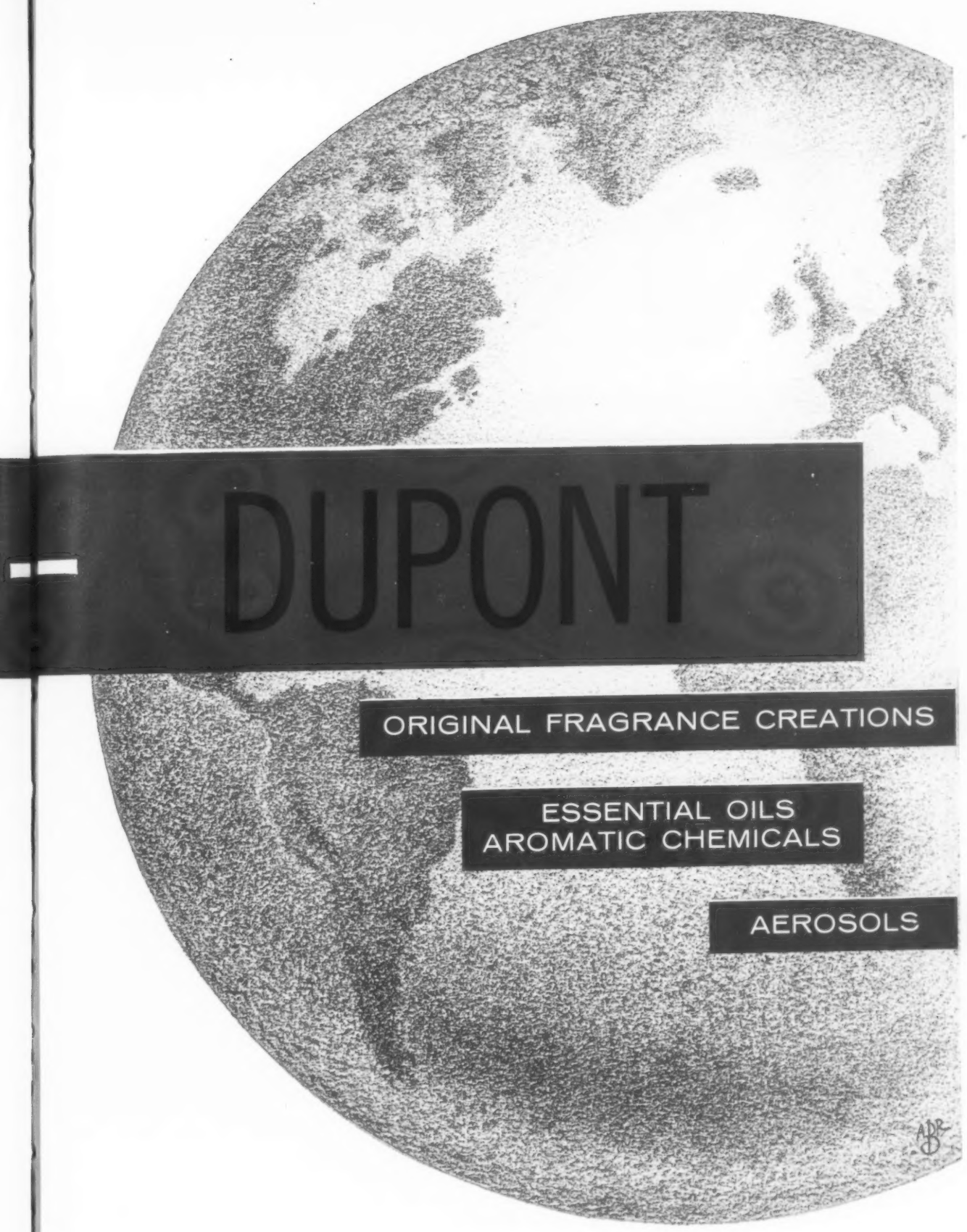
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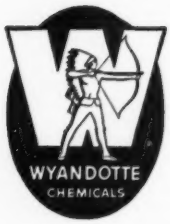

The Pluronic® found widespread acceptance progress to date in some

• *Laundry detergents*

Formulators of laundry detergents have discovered that the Pluronic series offers them many desirable properties. Some of these are: controlled sudsing, free rinsing, ease of formulation, compatibility with a wide variety of materials, good detergency, and permanent de-dusting with little or no moisture pick-up.

Pluronic F68 has been of special interest because its flake form permits formulation of a dry, free-flowing product.

The inherent flexibility of the series makes it easy to formulate compounds with optimum characteristics. Suds level, carbon soil removal, and whiteness retention can be varied easily to suit particular requirements.

• *Mechanical dishwashing compounds*

In this field the Pluronics have enabled formulators to eliminate staining and streaking, to control foam, and to get superior and more permanent de-dusting . . . all this without increasing the hygroscopicity of the compound.

What's more, the Pluronics are compatible with all commonly used builders, stable and effective over a broad range of pH, and non-corrosive to metals. They are relatively non-toxic, odorless and tasteless.

Pluronic L62 has proven especially effective in mechanical dishwashing compounds. It is exceptionally low foaming. It is excellent for promoting the rinsability of the hard surfaces encountered in washing dishes. And its relatively high molecular weight helps achieve more permanent de-dusting.

• *Rinse-aids for mechanical dishwashing*

This application was a natural for the Pluronic series. In fact, it was the introduction of these low-foaming Pluronic surfactants some ten years ago that made rinse-aids commercially practical.

Earlier attempts, using alkyl aryl polyether alcohols, sorbitol derivatives, and polyoxyethylene esters of tall oil, had proved unsatisfactory. The Pluronics met with immediate acceptance, because they controlled foaming while providing good wetting and rapid drainage with no break in the water film.

The Pluronics are essentially non-toxic in this application, and their nonionic character makes them ideally suited for use in hard water or with quaternary ammonium compounds.

• *Shampoos*

The Pluronics offer a particularly desirable combination of properties for shampoos. They can remove extraneous soil particles from the hair without excessive removal of natural hair oil. By leaving the proper amount of hair oil, the Pluronics leave the hair soft and manageable.

Since the grease-removal properties of the Pluronics are directly related to the hydrophobic-hydrophilic balance, it is possible to select the Pluronic with the exact grease-removal properties desired.

The Pluronics are non-irritating to the eyes or skin. They are compatible with all products commonly used in shampoos. And you can choose your physical form—from low-viscosity liquids, through pastes, to flake solids.

• *Metal cleaning*

The field of metal cleaning is unusually complex, due to the many variables in type of cleaning, types of

Pluronic Surfactants

series of nonionic surfactants has in many fields. This report highlights of the major applications.

metal to be cleaned, types of soil to be removed, and the processing that metals receive after cleaning. Most metal-cleaning operations, therefore, require a cleaning product designed to fit the particular process.

The Pluronics are especially valuable in metal-cleaning formulations for a number of reasons . . . they are stable and effective over a broad pH range, in both acid and alkaline solutions. They range from low foam to moderate foam . . . you can choose the exact sudsing characteristics you require. In electrocleaning, the controlled sudsing properties of the Pluronics preclude excessive hydrogen entrapment and reduce explosion hazards.

• *Water treatment*

Commercial usage by major producers of boiler-water compounds has shown the Pluronics to be one of the most valuable developments in the industry. There are two main reasons for this: their foam-depressing characteristics and their exceptional dispersing power for calcium and magnesium salts.

Other properties of the Pluronics that have proved beneficial in boiler-water treatment, and in some water-conditioning applications, are their compatibility and stability with acid or alkali solutions over a wide temperature range, and their unusually low order of toxicity.

• *The Pluronic Grid Approach*

"There must be an easier way to screen surfactants!"

You must have said this to yourself hundreds of times. Random evaluation of surfactants is costly, time consuming, and frustrating.

Well, there is a more direct approach to the problem. We call it the Wyandotte Pluronic Grid Approach. Here's how it works:

The properties of the Pluronic surfactants have been plotted as trends across the Pluronic Grid. By observing these trends, you can select those Pluronic grades having the best balance of properties for your particular application. After a few tests, you can narrow this area down to the best Pluronic or combination of Pluronics for your application.

Known trends for several general properties of the Pluronic series are shown. Other specific trends can be determined easily by evaluating a few Pluronic grades from various positions on the Grid. Thus, you can plot your own trends . . . individual trends directly pertaining to your own operations, conditions, and problems.

Of course, you won't *always* find what you're looking for in the Pluronic series . . . but there's a good chance you will. In any event, you will have covered a lot of territory with a minimum of time and effort.

If you have used the Pluronic Grid Approach, you know how fruitful it can be. If not, may we suggest that you write for your copy of the Grid today . . . no chemist working with surfactants should be without it.

IF YOU WOULD LIKE MORE INFORMATION about the Pluronics, or samples for your own evaluation or investigation, write us, giving as many details as you can about your application . . . such details will enable us to recommend those grades most likely to succeed. *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.*

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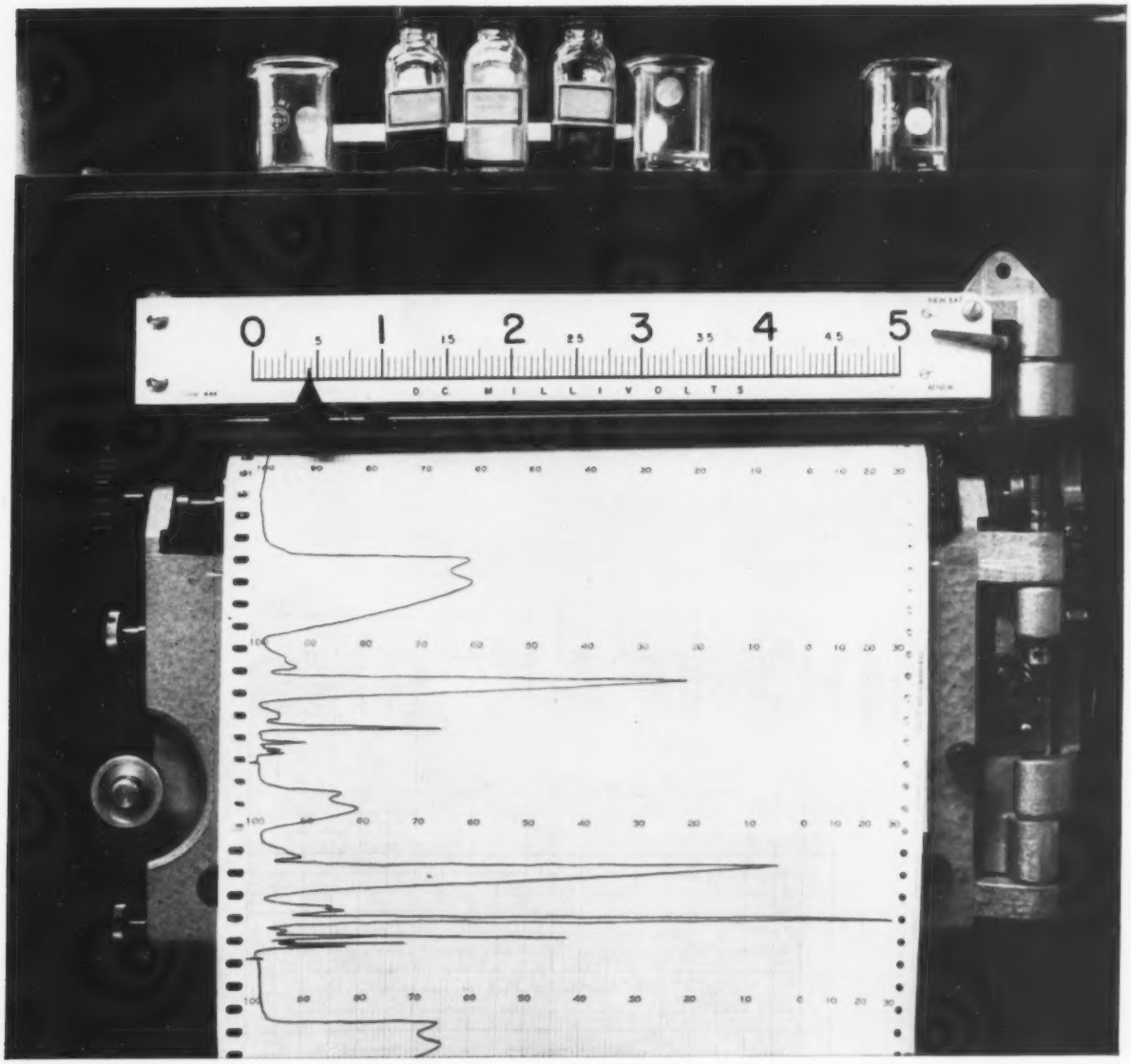

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Initially, the Gas Chromatograph was used in our lab as a research tool. Now, a second unit is an integral part of quality control on all production runs at the McCook, Illinois plant. Our GC was the first to be used by a producer of fatty acids. Using gas chromatography permits more rapid and exact qualitative and quantitative product analyses . . . enabling us to maintain the highest purity standards in fractionated and distilled fatty acids.

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DOW | NEW FROM DOW

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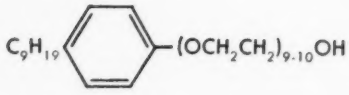

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And while you're at it, you may also wish to investigate other members of the Dowfax 9N surfactant family, available in sample quantities, as well as Dow's new anionic sulfonate-type surfactant, called Dowfax 2A1.

Literature and samples of Dowfax 9N9 are as near as your closest Dow sales office. Or, write THE DOW CHEMICAL COMPANY, Technical Service and Development, Midland, Mich., Dept. 602ER8.

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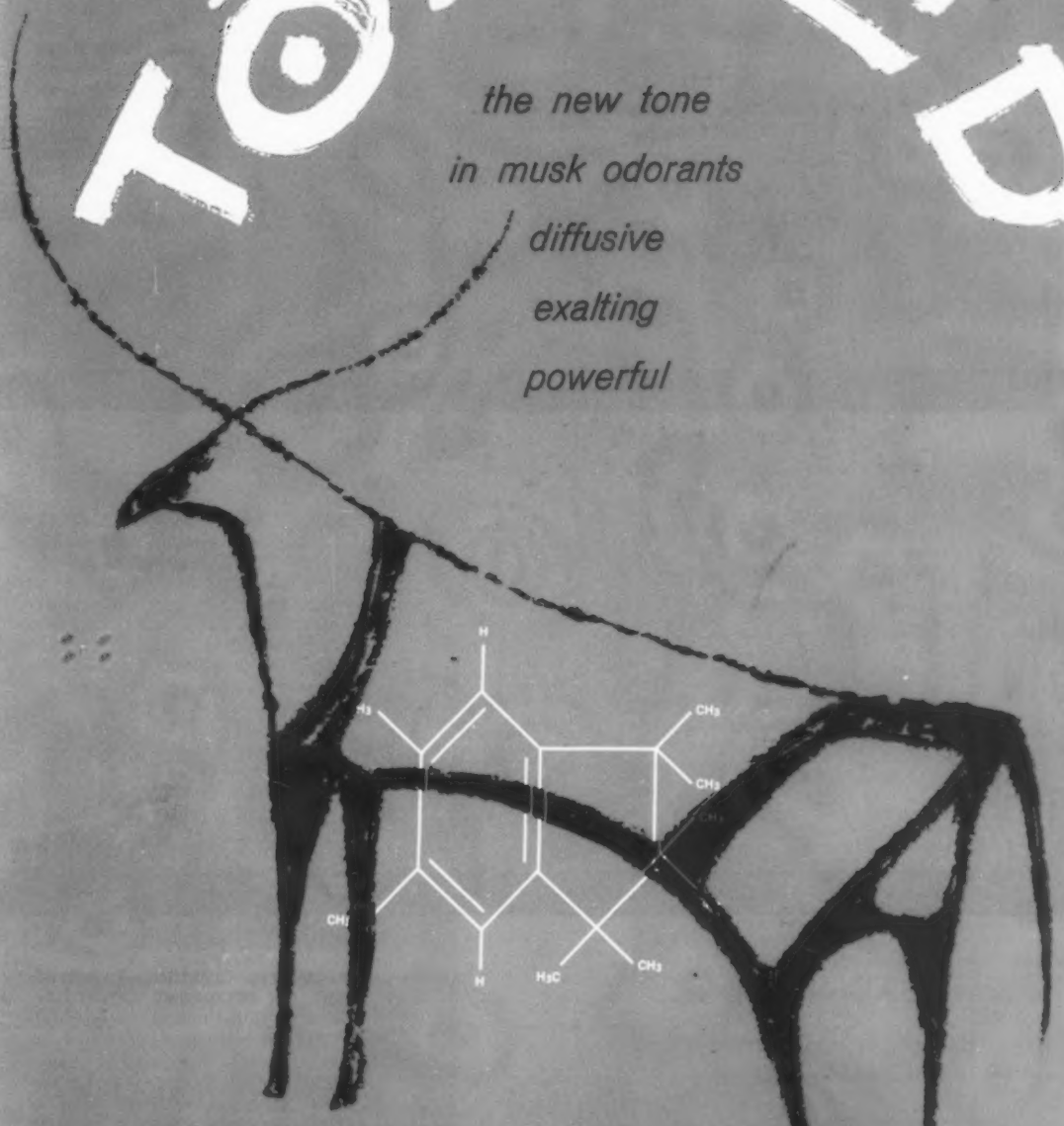

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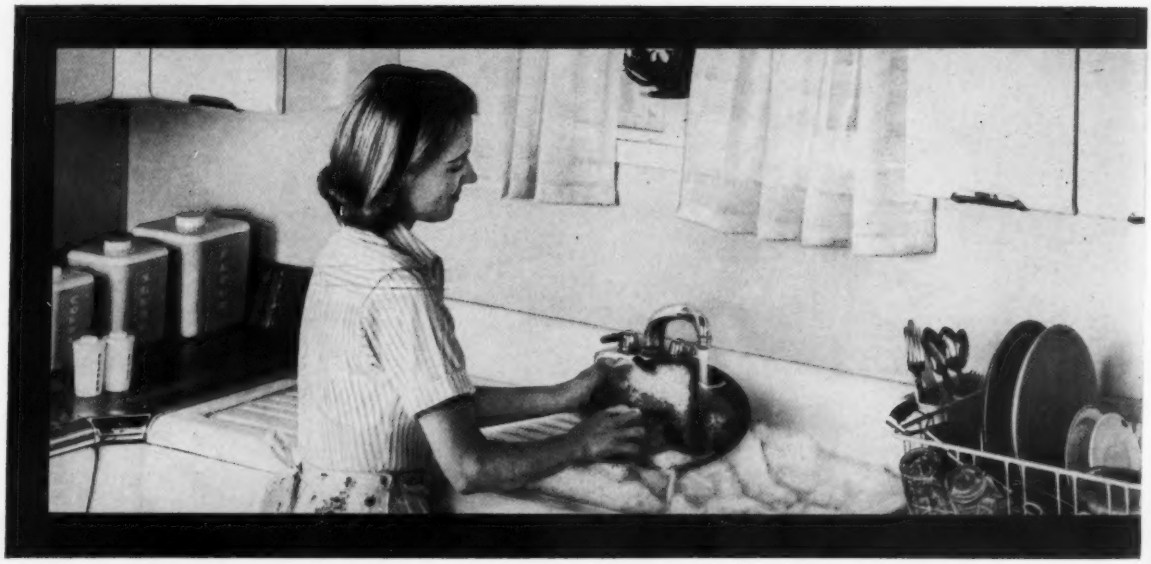

SPECIALIZED CLEANING TASKS DEPEND ON DETERGENT VERSATILITY. Ultra supplies outstanding, quality-tested detergent bases to meet your exact detergent requirements. As starting points for finished detergents, these quality products combine maximum economy with easy processing. They offer optimum characteristics for formulating specialty cleaning compounds both for industrial and institutional use. Ultra products are also outstanding in the textile and paper industries, and in concrete and cinder block manufacture, where they act as air-entrainment agents.

HOUSEHOLD CHORES ARE EASIER with today's harder-working liquid detergents and Ultra's superamides give them longer-lasting foams with improved performance. Ultrapole® LDA is particularly useful as a foam stabilizer and viscosity modifier in dishtergents. And, in cosmetics and shampoos, Ultra's alkanolamine condensates are ideal thickening agents and foam stabilizers.

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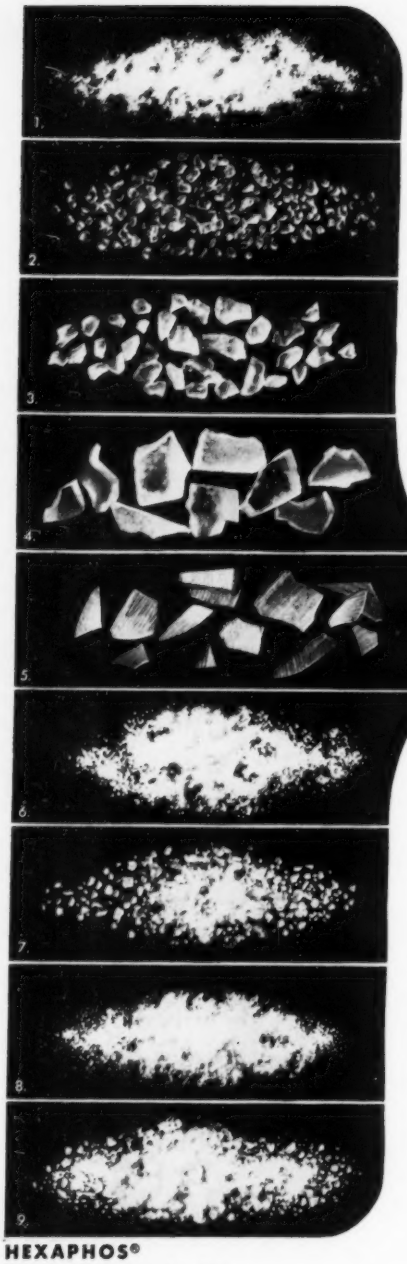

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1. Powder 2. Granular #1
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7. Adjusted Granular

SODAPHOS®
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FOSFODRIL®
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One of these soluble glassy phosphates gives maximum efficiency and economy in your process...

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Whatever your use for glassy phosphates, FMC gives you the widest latitude in choosing the physical form, P_2O_5 content and pH that works best for you.

All nine forms are highly soluble. Most rapidly soluble is the flake form of Hexaphos Sodium Hexametaphosphate . . . *made only by FMC.*

In addition to fully-integrated production of commercial grades, FMC produces high purity grades for use in food processing. Our nearest office will gladly supply samples and data.

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Mineral Products Division

General Sales Offices:
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AFTER CLOSING---

Frederick A. Schneller Dies

Frederick A. Schneller, 54, vice-president in charge merchandising for D'Arcy Advertising Co.,

Frederick A. Schneller

New York, died August 1 in New York.

Mr. Schneller was general merchandising manager of Lever Brothers Co. from 1947-1951, when he joined D'Arcy. Just before joining Lever Brothers, he was vice-president of the Cramer-Krasselt Advertising agency. Prior to that, Mr. Schneller had been advertising counsel of The Milwaukee Journal and sales and promotion manager of The Janesville (Wis.) Gazette.

—★—

Wheeler, Airkem Head, Dies

William Wheeler, 73, founder and president of Airkem, Inc., New York manufacturers of "Air-Wick" and other air-freshening products died of a heart attack July 23 at his summer home in Poughquag, N. Y.

Mr. Wheeler had founded and headed Airkem since 1941. He is credited with introducing chlorophyll into the deodorizing business. "Air-Wick," a blend of 125 compounds including chlorophyll, was developed as an answer to offensive odors. It was also used industrially under the name "Air-Kem" and added to the cooling plants of factories and offices.

—★—

P & G Settles F.T.C. Case

Procter & Gamble Co. and its wholly owned subsidiary, Procter & Gamble Distributing Co., Cincinnati, recently agreed to a year-old Federal Trade Commission order prohibiting the companies from making exclusive long-term contracts with manufacturers of washers and dishwashers to pack samples of its soaps, detergents, and bleaches in new machines.

P & G agreed to a consent order—a legal settlement that does not represent an admission that the companies violated the law.

The F.T.C. had charged in its original complaint of last year that P & G obtained exclusive contracts with washer makers to place samples of "Tide," "Dash," and "Cascade" in new machines, so that by 1957 P & G had "a complete monopoly" of this type of promotion.

Commenting on the consent order, a company spokesman in Cincinnati said: "We are pleased that this matter is settled. We made changes in the operation of this program many months ago following consultation with the commission. Most of the consent order concerns activities which are no longer current and haven't been a part of our operation since well before the complaint was issued."

—★—

Revlon Sales Record

The highest first-half year sales and earnings in the 28-year history of Revlon, Inc., New York, were achieved in the period ended June 30, according to a recent report by Charles Revson, president.

Net sales rose 8.2 per cent to $62,900,000 from $58,157,000 last year. Net income increased 6 per cent to $5,200,000 from $4,908,000 last year, or $2.00 per share of common stock against $1.90 last year.

—★—

Mischler to Hollingshead

The maintenance chemical division of R. M. Hollingshead Corp., Camden, N. J., named Maynard E. Mischler customer relations supervisor, according to a recent

Maynard E. Mischler

announcement by Richard S. Moseley, manager.

Mr. Mischler was previously with L. H. Buck Co., Plattsburgh, N. Y., where he was sales manager of the maintenance division. His headquarters will be at Hollingshead's executive offices in Camden.

—★—

ADA Boosts "Crest"

Classification of "Crest" toothpaste made by Procter & Gamble Co., Cincinnati as an "effective decay-preventive agent" was officially announced by the American Dental Association in a statement published in the Aug. 1 issue of the *Journal of the American Dental Association*.

"Crest" contains stannous fluoride as its principal active ingredient. The P & G toothpaste is the first and so far the only dentifrice to receive such recognition. The ADA adds that, while the stannous fluoride dentifrice is an aid in combating dental decay, it is no cure-all and no substitute for fluoridation of the water supply.

FTC Cites "Rise" Advtg.

Carter Products, Inc., New York, manufacturer of "Rise" shaving cream has been charged recently by the Federal Trade Commission with using deceptive television commercials which disparage competing shaving lathers.

According to FTC, the commercial implies that competing lathers dry out during a shave making shaving more difficult and uncomfortable while "Rise" stays "moist and creamy" throughout resulting in an easier and more comfortable shave.

In reality, the supposed competing lather is a formulation specially prepared for the demonstration and is not a product used for shaving purposes, the complaint alleges. Consequently, it charges, this demonstration is not a valid comparison of the respective qualities of "Rise" and competing products and tends to disparage the latter.

—★—

Pillsbury Buys Tidy House

Tidy House Products Co., Shenandoah, Ia., detergents and allied products manufacturer, has been bought by Pillsbury Co., Minneapolis, it was announced in July. Annual business of Tidy House is said to amount to $6,000,000.

—★—

Yardley Sales Executives

Philip C. Smith, president of Yardley of London, recently announced two appointments to the sales executive staff. Fred J. Fitzgerald was advanced to the newly created position of national sales manager. Donald J. Flannery was promoted to field sales manager, the position previously held by Mr. Fitzgerald.

Mr. Fitzgerald will be responsible for the co-ordination and direction of all sales activities of the American company. The continually increasing volume of the business prompted the need for a central authority in the sales area, Mr. Smith said. Mr. Fitzgerald, with Yardley for 23 years, has been on the executive staff for five years as field sales manager and, prior to that, as assistant field sales manager.

Mr. Flannery joined Yardley in 1959 as manager of chain store sales after a long association in the cosmetic industry. Both men will make their headquarters in the Yardley executive and sales offices at 620 Fifth Avenue, New York.

—★—

Penick Buys Toronto Firm

S. B. Penick & Co., New York fine chemicals and botanicals house, announced recently purchase of a majority interest in Fine Chemical of Canada, Ltd., of Toronto. The 20 year old Canadian firm is in the medicinals, fine chemicals, botanical drugs and animal extracts field.

—★—

Fuller Advances Joy

Avard E. Fuller, president of Fuller Brush Co., East Hartford, Conn., recently announced the promotion of M. Verne Joy to the position of industrial sales manager. Mr. Joy's new responsibilities will include supervision of the entire industrial field sales organization and the industrial home office sales group. He will also institute and direct an intense program to create, develop and promote new industrial products for Fuller Brush.

In 1945, he joined Fuller Brush and was assigned to special projects in the industrial products division where he has served until his most recent position of sales supervisor.

M. Verne Joy

New Perry Odor Masks

Two new isopropyl alcohol deodorants were introduced recently by Perry Bros., Inc., 61-12 32nd Avenue, Woodside 77, N. Y. Designated "Permask-Iso #9" and "Permask-Iso #18" the compounds are used in a ratio of one to two grams to one gallon of isopropyl alcohol.

. At the same time, the firm announced the appointment of R. E. Flatow & Co. as West coast representatives. Flatow maintains office and warehouse facilities at 10 Madison Street, Oakland, and 2445 E. Hunter Street, Los Angeles, Calif.

—★—

Albert Verley Tribute

A commemorative notice on Dr. Albert Verley, famed French perfumer, who died earlier this year, was published recently by La Societe Technique des Parfumeurs. One of the co-founders, in 1929, of la Cie. Verley U.S.A., forerunner of Albert Verley & Co., Chicago, and Linden, N. J., Dr. Verley was an eminent chemist. He took his doctorate under Charles Friedel, and later specialized in the chemistry of perfumes.

Among his leading achievements were the preparation of vanillin industrially using ozone. This work was carried on in collaboration with Otto. Later, with Batzouroff, he perfected the distillation of rose oil in Bulgaria and carried out industrial synthesis of camphor, passing directly from pinene and camphene. He is credited with being the first to prepare undecalactone. Well before World War I, he exported special products including fatty aldehydes.

He devised the method of exchange of functional groups known by the name of Verley-Meerwein-Pondorff, which was used to prepare a large number of raw materials which were difficult to handle by other methods.

In 1917 he set up his factory at I'lle Saint Denis, which he directed until his death. He has been assisted by his son since 1940.

New Categories for CSMA Aerosol Contest

THE ninth annual aerosol package awards contest conducted by the Aerosol Division of the Chemical Specialties Manufacturers Association was announced late in July.

There will be fifteen product classifications in the 1960 contest, including three new ones covering types of aerosols which have become major sales categories. An award will be given to the best foreign entry among all the foreign packages competing in the various product categories.

According to J. J. Tomlinson, General Chemical Division, Allied Chemical Corp., New York, chairman, Aerosol Package Awards Committee, "the additional categories reflect the continuing sales rise of the overall industry which reached 575 million units in 1959." "In addition to the well known product groups considered in past years, these new categories have been added since the number of marketers and brands on the market has increased materially and they no longer can be considered in miscellaneous categories," he said. "In addition, the Foreign Entry classification recognizes the rapid expansion of aerosols outside the United States and the increasing cooperation between the CSMA Aerosol Division and its European counterparts."

The fifteen categories in this year's contest are as follows:

1. Automotive
2. Insecticides, Repellents and Moth Proofers
3. Room Deodorants
4. Paints, Enamels, Other Protective Coatings and Paint Remover
5. Other Household Products
6. Shave Products
7. Hair Preparations
8. Perfumes, Colognes and Toilet Waters
9. Other Personal Products
10. Food Products
11. Horticultural Products
12. Medicinal and Pharmaceutical Products
13. Veterinary and Pet Products
14. Industrial Products
15. Foreign Products

Best package will be selected in each of the fifteen groups. In addition, a "best package in the show" will be chosen from the group winners. Announcements of winners and awards of certificates will be made at the 47th annual meeting of CSMA in Hollywood Beach, Florida, December 5-8.

Contest entry blanks have been mailed to all known marketers and fillers. In addition, entry blanks are available from CSMA headquarters, 50 E. 41st Street, New York 17, N. Y. Entries will close October 15 and products submitted must be on the market and have been freely offered for sale prior to September 1st. Entries are open to any aerosol brand owners or marketers and are not restricted to members of the Chemical Specialties Manfacturers Association.

"All entries must be made in the name of the vendor, brand owner or marketer," Mr. Tomlinson said. "Contract fillers are urged to enter packages for their customers and also to make every effort to see that their customers are well represented. Last year's contest drew almost 200 entries in the eight-year old award program" Mr. Tomlinson said.

—★—

Givaudan in Spain

Construction has been started on a new plant of Givaudan Iberica, S.A., latest member of Givaudan's international organization, it was announced recently by Givaudan-Delawanna, Inc., New York 36. Managing director of the newly formed company will be Salvador Sanz de Acedo, who bears the title of executive vice-president. Mr. Sanz, who is a grandson of Xavier Givaudan is currently in the United States to coordinate the Spanish firm's activities with the manufacturing, research and development departments in Delawanna.

Salvador Sanz de Acedo

Located in San Celoni, 35 miles from Barcelona, the new plant is scheduled for completion within 12 months. It will supply basic perfume materials to the growing Spanish soap, toiletries and related industries.

Officers of the new organization in addition to Mr. Sanz will be: Xavier Givaudan, chairman of the board; Jose Valls Taberner, president; and Andre Givaudan, vice-president. Mr. Taberner is also president of Cros S.A., one of Spain's leading chemical firms.

—★—

New Company Name

Ions Exchange and Chemical Corp., New York manufacturer of bacteriostats, textile, rubber and plastic treatments, cements, and other chemicals, has changed its name to Yardney Chemical, Inc., according to a recent announcement by Michael N. Yardney, president.

At the same time the company assumes the marketing functions of Yardney Chemix Corp., until now the sole American sales agent for Ions Exchange products. The change centralizes all related activities within the same company.

Among Yardney products are: "Eversan," antibacterial treatment for textiles, rubber, and plastics; and "Agosan," antibacterial compound incorporated into soaps, detergents and cosmetics which is reported to be non-toxic and non-irritating.

American Can to Make Glass Containers

PLANS for the American Can Company's entry into the glass container manufacturing industry were outlined late last month by William C. Stolk, chairman and chief executive officer, in a letter to stockholders. Mr. Stolk described the program as a "significant step forward in the further diversification of the company's operations."

First plants of a newly formed majority-owned subsidiary, American-Wheaton Glass Corp., will be at Terre Haute, Ind., and at Minneapolis, Minn., Mr. Stolk said. The new company will have "plants strategically located throughout the United States as warranted by its volume of business."

Plans to enter the glass container industry had been under study for two years, Mr. Stolk said. One consideration was "the fact that glass containers, while differing in characteristics and often in function, have a much lower raw material cost than packages made of metal, paper or plastics."

"It seemed to us that having no plants or equipment for manufacturing glass containers, we should start out by creating the most modern facilities and machinery available," the letter said. "What was not immediately available was the glass manufacturing know-how. Our study of this proplem indicated that if we could obtain such know-how by interesting one of the successful glass companies to join with us in this venture, our objectives would be more quickly realized.

"Our investigation revealed that the Wheaton family, which has been in the glass business for three quarters of a century, concentrating on the production of pharmaceutical and cosmetic glass containers, and during that time established itself among the best in the industry, represented the type of associate we needed to supply us with their extensive know-how in manufacturing quality food and related glass containers so as eventually to contribute to the profits of the company.

"Our approach to Wheaton was successful because both groups are intensely interested in producing quality products at a profit and both are great believers in research to improve continuously product and manufacturing techniques; both also believe in the continuing effort of improving design as well as quality of product.

"We believe that the combined background of generations of experience in both metal can and glass container manufacture which American Can and the new company will bring to the field will make a significant contribution to the future growth of the glass container industry."

American-Wheaton Glass Corp. will operate as a majority-owned subsidiary, with a majority interest held by the Wheaton Glass Co., Millville, N. J.

—★—

Roger C. Baker Dies

Roger Carroll Baker, 67, a retired executive of Colgate Palmolive Co. and of Lever Brothers Co., New York, died of a heart attack June 29 at his home in Washington, D. C.

Mr. Baker was an officer of the Lipton Tea Co. before he joined Colgate Palmolive Co. He was with the company for 15 years before he joined Lever Brothers. He retired in 1950 because of illness.

—★—

Carter Elects Peake

Kirby Peake administrative vice-president of Carter Products, Inc., New York, was recently elected to the board of directors.

—★—

Stepan Advances Rhoads

Stepan Chemical Co., Chicago recently appointed William S. Rhoads sales manager of the newly created industrial chemicals division.

Mr. Rhoads was formerly eastern sales manager for Stepan. His headquarters are at Stepan's new $1,000,000 administrative and research center in Northfield, N. J.

William S. Rhoads

At the same time Stepan announced that Edward R. Mass had been appointed controller and office manager of the new industrial chemicals division. He was formerly assistant to the treasurer of Stepan.

—★—

Emil Ott Leaves FMC

Announcement of the resignation of Emil Ott as vice-president for research and development of the chemical divisions of Food Machinery and Chemical Corp., New York, was recently made. Dr. Ott continues as a part-time consultant for the company and devotes himself to academic activities.

Before joining FMC in 1955, he had been research director for Hercules Powder Co. for 16 years.

—★—

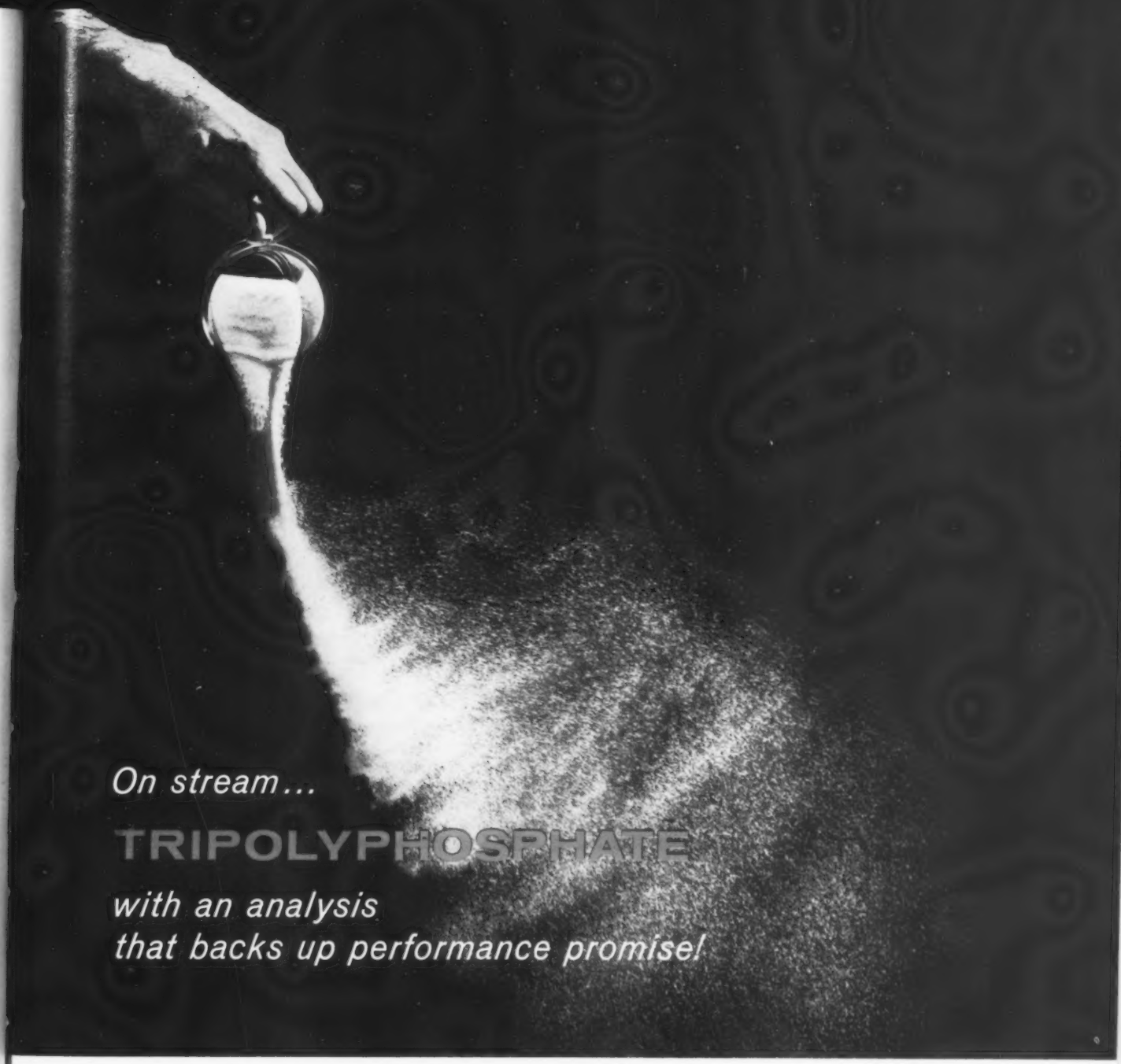
Yardley to Build Plant

Yardley of London, Inc., New York, has announced that construction recently began on a new $2.5 million plant in Totowa, N. J.

The 260,000 square foot plant represents an expansion of facilities over Yardley's present one in Union City, N. J. Louis L. Brennesholtz, vice-president of production of Yardley, indicates that construction will take at least a year to complete.

The new plant is designed to complement the 30-acre, campus-like wooded tract on which it is located. Located off Union Boulevard, the plant will have a paved plaza with a pool and fountain at the entrance. The entire building will be faced with white brick.

Manufacturing facilities for all types of Yardley toiletries will be located off-ground on the second story. Both manufacturing and administrative sections will be air conditioned. Plans include a 5,000 foot garden hall lounge area, space for cafeterias, medical facilities, and locker rooms, as well as outside recreational space.



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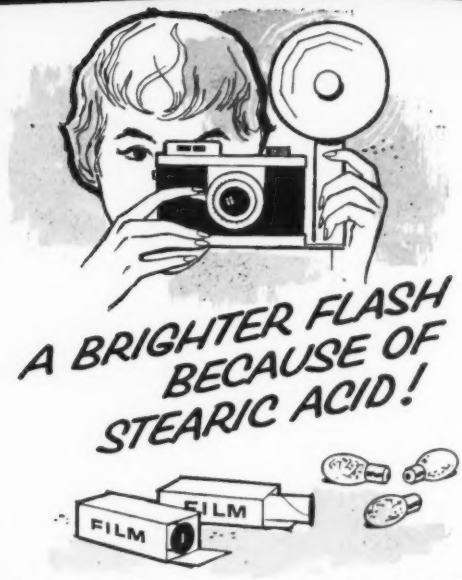

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Color 5¼" Lovibond Red	1.0 max.	1 max.
Color 5¼" Lovibond Yellow	5 max.	8 max.
Color Gardner 1933		2 max.
Unsaponifiable	0.75% max.	1.0% max.
Saponification Value	204 – 207	201 – 206
Acid Value	203 – 206	200 – 205
% F.F.A. as Oleic Acid		99.5 min.
Iodine Value (WIJS)	2.0 max.	90 max.
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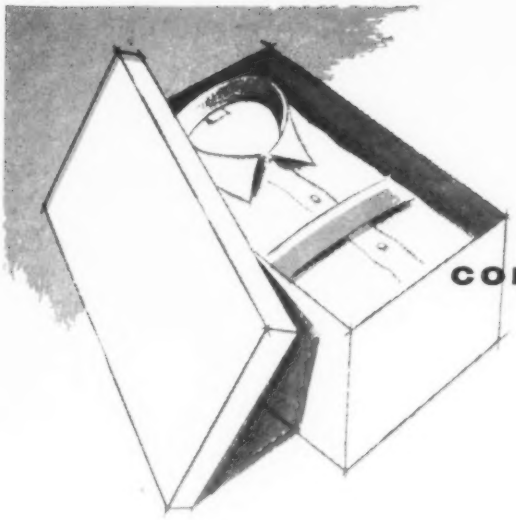

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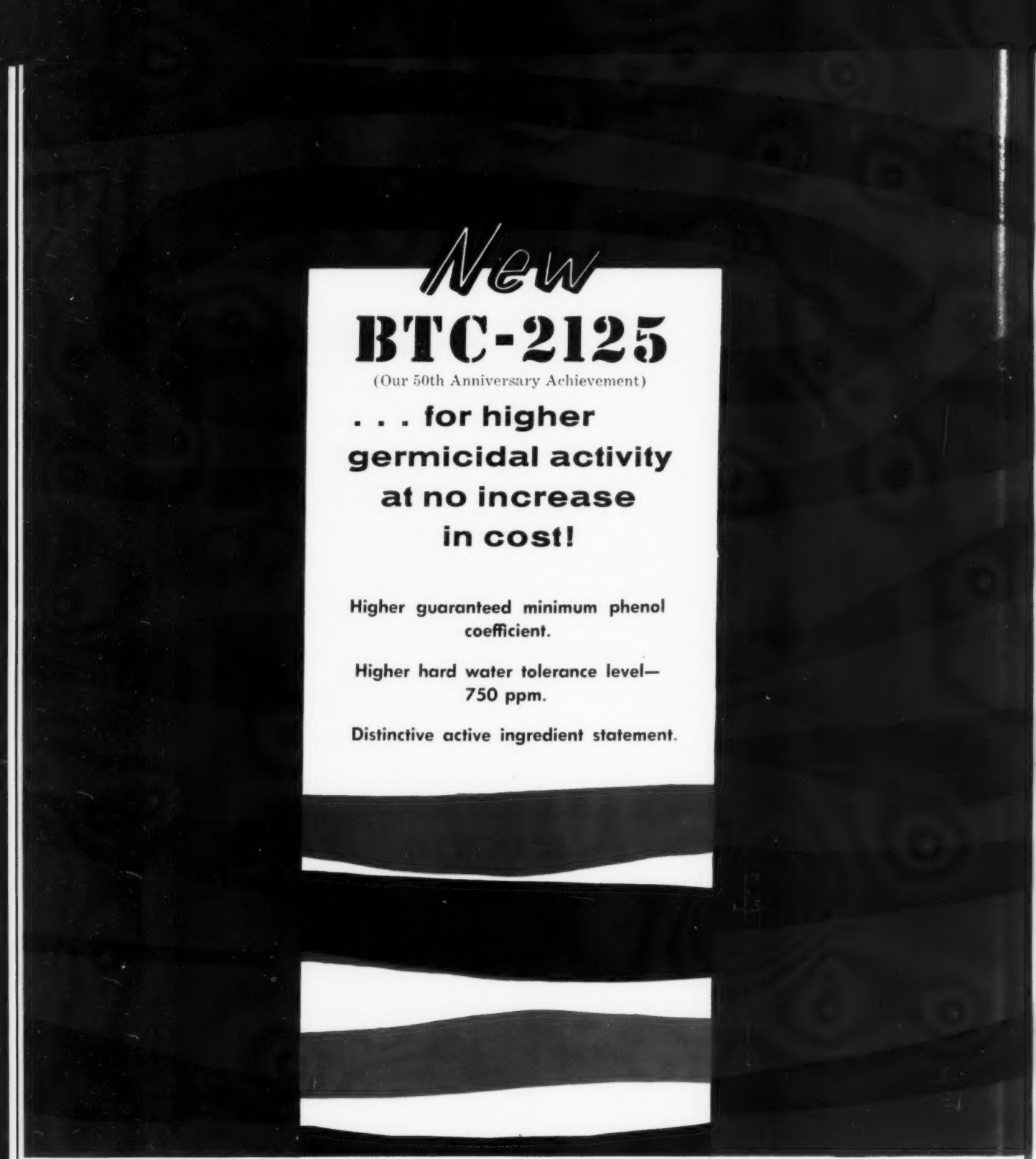
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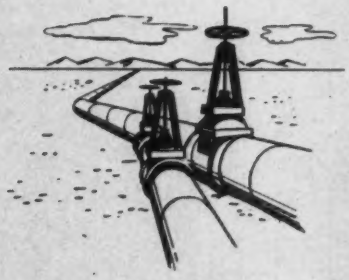

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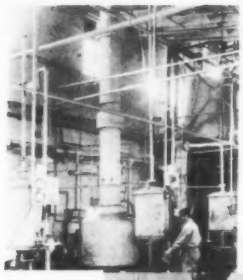

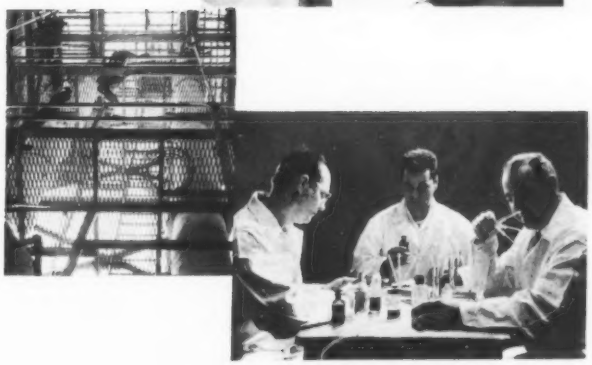

The habit of *fragrance* consciousness is a potent force in the appealing words written and spoken in the media that carries *your* story to the public.

Fragrance as an art and as a practical accomplishment is the intelligent use of a combination of skills and abilities. The compact Verley organization has developed the *experience* of its staff into a productive effort that treats with imagination and care the desired solution to your fragrance problem.

The group exposure of our staff to many types of ingredients and formulations has made us particularly receptive to any new CHALLENGE that calls for the demonstration of our proving that to help is our reason for being available.

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Albert Verley & Company

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VERSATILE, ADAPTABLE, EFFECTIVE SURFACTANTS

The Rohm & Haas family of TRITON surfactants offers you a remarkable range of properties in formulating a wide variety of cleaning compounds. In TRITON X-100 and the many other TRITON surface active agents, a few of which are listed above, you have a choice of water or oil solubility, active ingredient content ranging from 70% to 100%, and high or low foaming, to mention just a few. And the use of TRITON surfactants is not limited to household and commercial detergents, detergent-sanitizers and similar products. Several of them are now used in the petroleum field as foaming and wetting agents, and in textile processing, agriculture, metal cleaning, paper making, dry cleaning solvents, firefighting, dust allaying and many other applications. Rohm & Haas has compiled extensive data on each of these proved surfactants. Write for samples, literature and formulating help.

TRITON is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.

Chemicals for Industry

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WASHINGTON SQUARE, PHILADELPHIA 5, PA.

AT BLOCKSON THE PHOSPHATE BUYER IS KING

We serve him with informed salesmen and practical Tech men. Both are phosphate specialists. Very prompt mixed-car, mixed-truck shipments reduce his costs. Nearby Blockson jobbers speed his L.C.L. deliveries...Send for catalog of phosphates and other Blockson chemicals.

BLOCKSON

BLOCKSON CHEMICAL COMPANY
Chemicals Division
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Arizona, world's largest producer of tall oil chemicals, has completed its giant new Springhill, La. plant. It will soon be in full production. The new facility gives Arizona an even larger fractionating capacity . . . assures you of continuous supplies of the finest tall oil products—better, faster service. Arizona research is developing tall oil products tailored to the particular needs of your industry . . . products to bring your operation greater efficiency and economy. This new plant is another step in Arizona's sustained effort to provide you with the best in tall oil products and service.

ARIZONA CHEMICAL COMPANY, 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

ACINTOL® Products: ACINTOL D and ACINTOL DLR Special Distilled Tall Oil • ACINTOL FA1, FA1 Special and FA2 Tall Oil Fatty Acids • ACINTOL R Tall Oil Rosin • ACINTOL P Tall Oil Pitch • ACINTENE® Terpenes

Caustic users in the industrial East, Midwest and mid-South can always depend on us to deliver promptly by the fastest possible route.

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And you are always assured of high quality caustic in the grade and form you need, produced under modern automatic controls. Liquid grades are handled through nickel pipes, stored in lined tanks and "polish filtered" just before shipment for utmost clarity.

Why not see for yourself what we have to offer. Let us ship the next spot order you place.

CAUSTIC SODA Liquid 73%: Liquid 50%, Regular and Low-Chloride Grades: Flake, Solid and Ground
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General Sales Offices:
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FOOD MACHINERY AND CHEMICAL CORPORATION

CORNERSTONE FOR DRY COMPOUNDING

Need a reliable and economical cornerstone for your dry compounding?

HD-90 is a drum-dried sulfonate flake that is dust-free, dry flowing, colorless and odorless; and these fine properties stay that way even after long periods of storage or climatic changes.

Pilot HD-90 is the result of an ice-cold sulfonation in a dilute, air-free vacuum. This unique process builds-in an outstanding detergency and sudsing character

Pilot HD-90, an excellent *hard surface cleaner* "as is," will formulate all sorts of *specialty cleaners* that dry clear without sulfate residues.

High-foam-per-pound-of-active makes HD-90 ideal for such products as *scouring powders* and *bubble baths!* The high organic and blandness of HD-90 is desirable for *cosmetics, dishwashing liquids, etc.* HD-90 may be used to increase the concentration of sulfonate active in *dry mixes* which have been "dry neutralized" from Pilot ABS-99 Sulfonic Concentrate.

Write today for samples and information.

LEADS THE WAY TO BETTER PRODUCTS
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PILOT *Chemical Company of California*

P.O. BOX 22130
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Basic Processors of Hydrocarbons for
Sulfonate Flake
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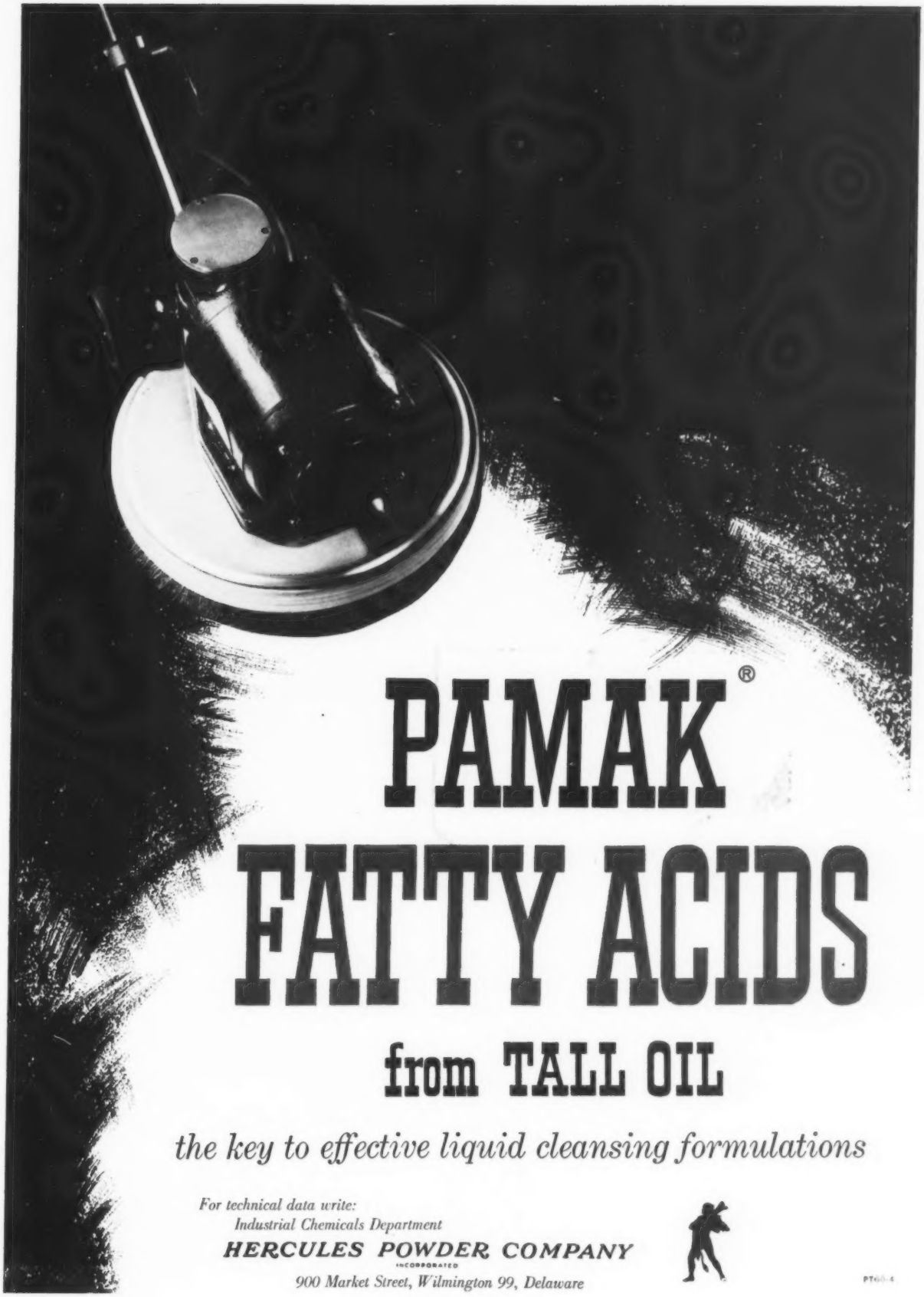
Sulfonic Concentrates



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FATTY ACIDS

from TALL OIL

the key to effective liquid cleansing formulations

For technical data write:
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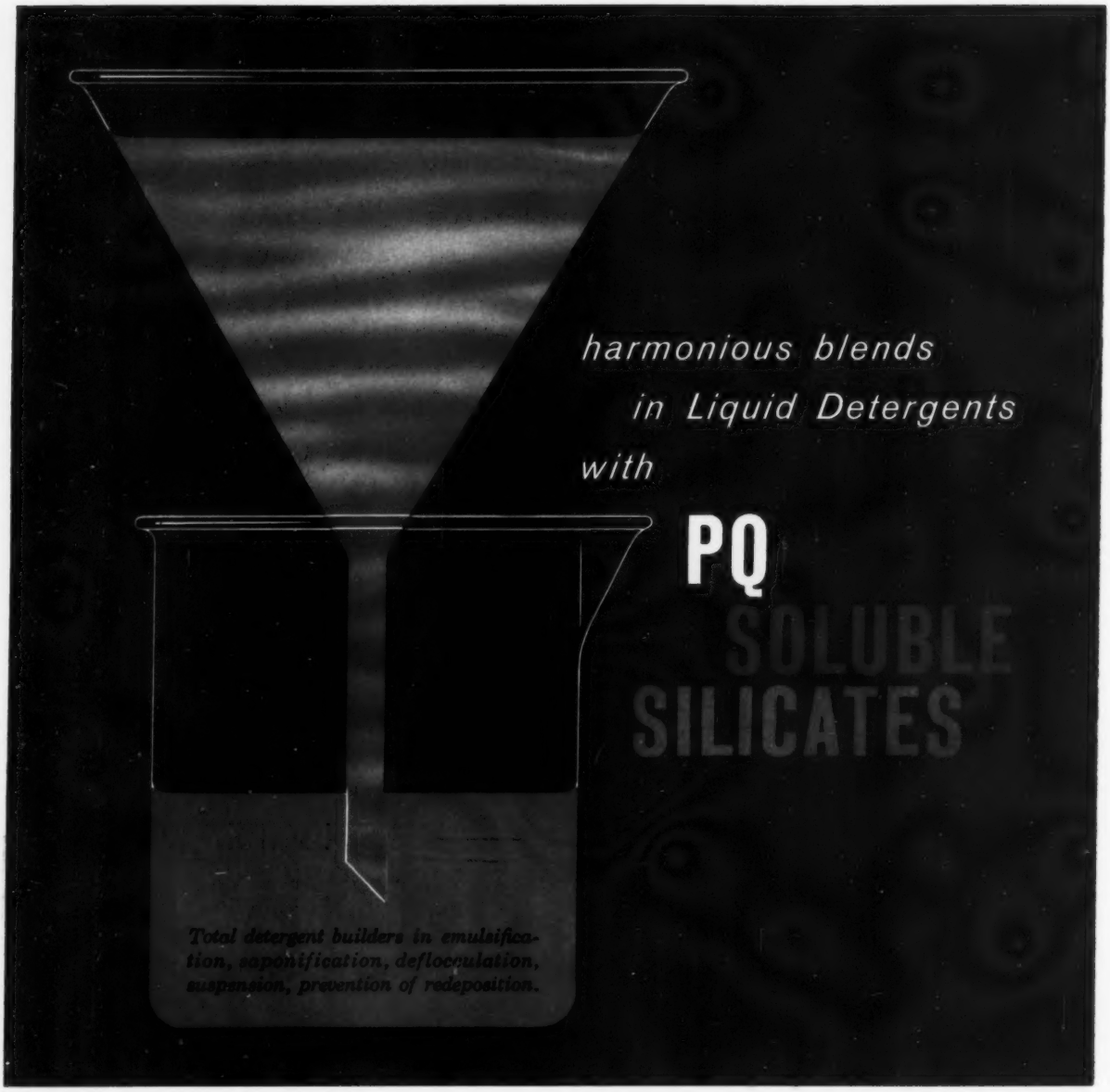


When you build synthetic-detergents with soluble silicates expect improved detergency at lower costs. The hard working ingredients (alkali and silica) are of themselves proved soil removers. An increased proportion of the PQ soluble silicates (sodium or potassium) in your detergents insures unique top performance with *an attractive cost advantage.*

Do you have a copy of the bulletin #1-22 "Liquid Detergent Builders"? Read about the compatibility and stability of the silicate-polyphosphate mixtures at various ratios and concentrations.

We welcome the opportunity to supply you with samples of sodium silicate or potassium silicate and to suggest how PQ silicates can be most effectively used in liquid detergents that you are considering.

PQ SOLUBLE SILICATES
SODIUM SILICATES • POTASSIUM SILICATES

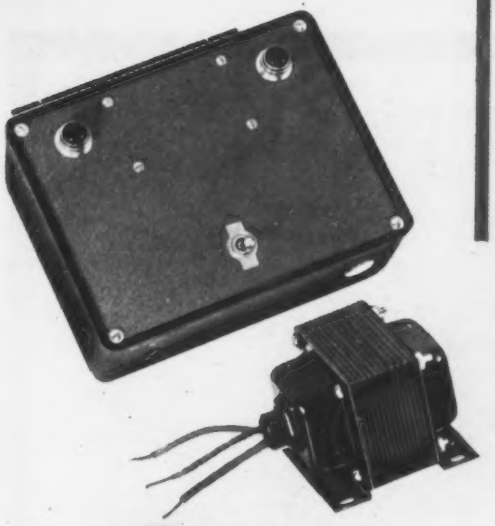
TRADEMARKS REG. U. S. PAT. OFF.

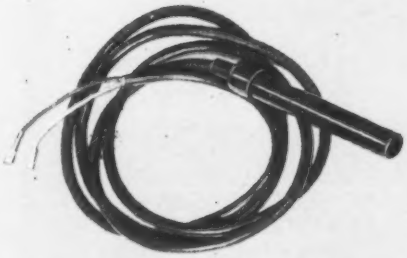
PHILADELPHIA QUARTZ COMPANY
1152 Public Ledger Building, Philadelphia 6, Pa.

Associates: *Philadelphia Quartz Co. of Calif., Berkeley & Los Angeles, Calif., Tacoma, Wash.; National Silicates Limited, Toronto & Valleyfield, Canada. Distributors in over 65 cities.*

PQ PLANTS: ANDERSON, IND.; BALTIMORE, MD.; BUFFALO, N. Y.; CHESTER, PA.; JEFFERSONVILLE, IND.; KANSAS CITY, KANS.; RAHWAY, N.J.; ST. LOUIS, MO.; UTICA, ILL.

NEW DESIGNS FOR DISHWASHING





Model DC100 Detergent Control

Automatically controls amount of detergent fed into a dishwashing machine. Simplified electrical circuit of sturdy components, coupled with a conductivity cell, responds to conductivity of wash solution which varies with detergent concentration. Green lamp indicates "power on"; red lamp signals need for more detergent. Three-part unit consists of: control head; transformer, and dip-type conductivity cell.

DEMA INTRODUCES A COMPLETE LINE OF LIQUID FEEDERS AND INJECTORS

Four new mechanical dishwashing accessories: *On the left* . . . Dema's new Electric Controller; *on the right* . . . Dema's new proportional Rinse Injector; *below* . . . two new Liquid Dishmachine Detergent Feeders.

Each has an important place in today's mechanized kitchen . . . each is promotionally priced and engineered for easy installation.

Give your liquid dishwasher chemical sales a *Dema injection* today. Write for full information.

DEMA ENGINEERING COMPANY

Designers and Manufacturers of Automatic Dispensing Devices

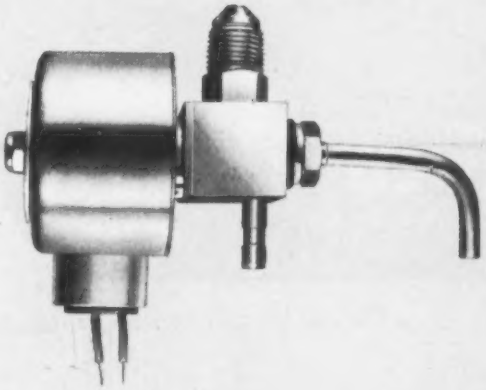
10020 Big Bend Blvd., St. Louis 22, Mo.

Model 224 Rinse Injector

Injects accurately metered amounts of rinse additive in direct proportion to the flow of water — not at a fixed rate. Has no electric wiring or moving parts . . . installs on either side of rinse valve . . . flow meter shows injection rate. Operates dependably on high or low water pressure. A two-stage venturi is utilized for positive injection. Additive supply is easily replenished while machine is functioning. Bottle holder adjustable for containers up to one quart in size.

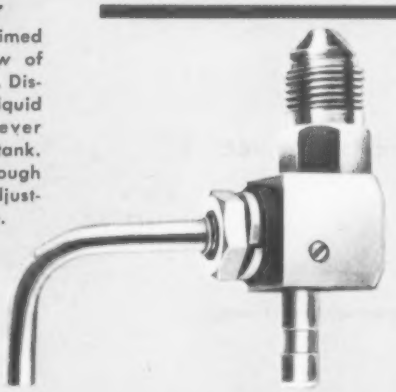
Model 219 Liquid Feeder

Dispenses liquid dishmachine detergent from any size bulk container through polyvinyl tube and discharges directly into wash tank. Integral solenoid water valve, responsive to electric controller, controls admission of a small flow of water to actuate feeder. Mounts readily to side of dishwasher.



Model 217 Liquid Feeder

Automatic liquid controller, timed and actuated by a small flow of water bled from final rinse line. Dispenses a pre-set quantity of liquid dishmachine detergent whenever fresh water is added to wash tank. Connects to bulk container through polyvinyl tube. Feed rate is adjustable for any machine and cycle.



CALL SURFACT-CO FOR SURFACTANTS

ALKANOLAMIDES
ALKYL ARYL SULFONATES
LAURYL SULFATES

Surfact-Co will help you balance your detergent formulations for optimum performance at lowest cost

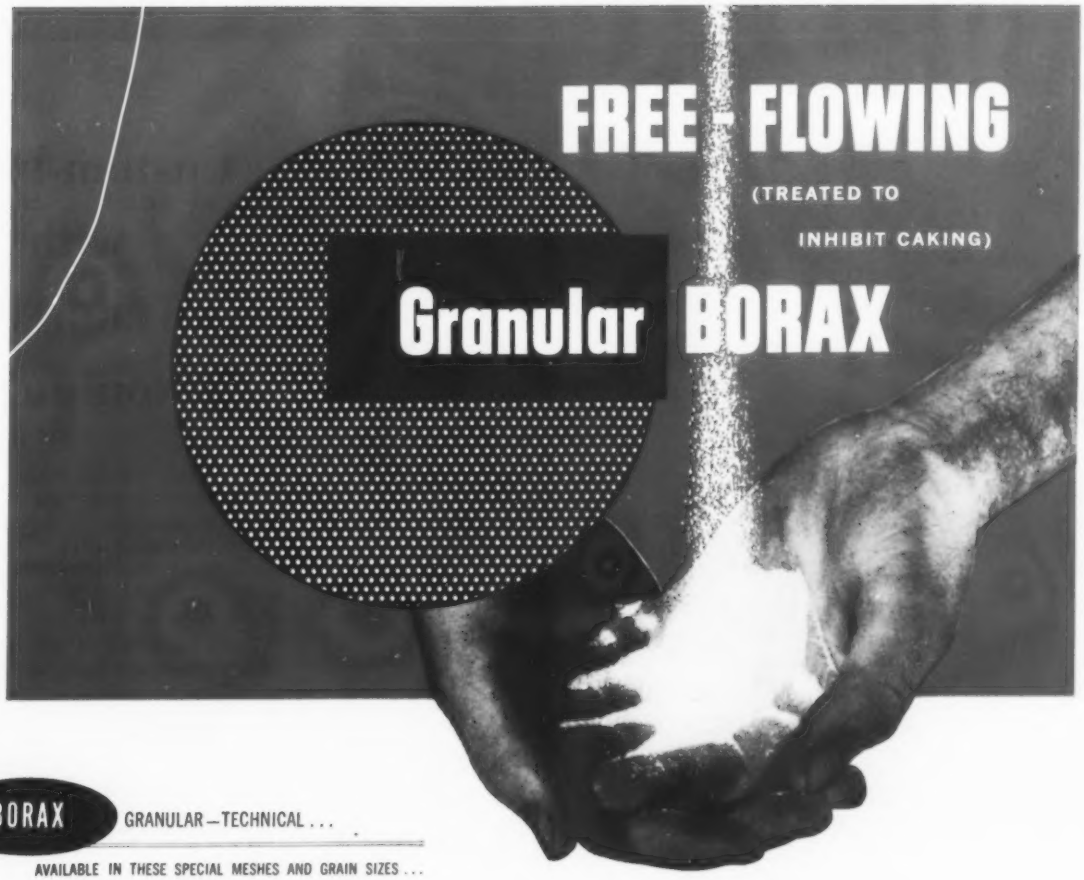
Surfact-Co now supplies the detergent industry's basic surfactants at minimum cost per pound of active ingredient.
Surfact-Co Tech Service includes product development, formulation and production assists—until the problem is solved.
What's your application, what's the problem? Check with Surfact-Co.

Write for Tech Bulletins and Formula Suggestions for these SURFACTANTS BY SURFACT-CO

PRODUCT	USE ASPECTS	APPLICATIONS
DODECYL BENZENE SULFONIC ACID (Surco DDBSA)	Ammonia or diethanolamine neutralization. Dry Soda Ash-Sodium Tripolyphosphate neutralization	Kerosene degreaser and cleaner • Floor cleaner-coupling agent. Low cost car shampoos. Pourable gel concentrate
AMMONIUM NONYL PHENOXYETHYLENE SULFATE (Surco 57)	Auxiliary foamer and detergent in liquid preparations	Dish detergents • car shampoos
DESALTED SODIUM ALKYL ARYL SULFONATE (Surco SF42M)	Contains minimum salt in ethyl alcohol solution	Glass rinses • Liquid dish detergents • General synthetic cleaner • Oven, exhaust fan, deep fry cleaner • Clarifying agent for ammonium alkyl aryl sulfonate solutions
LAURIC DIETHANOLAMIDE (Surco Stabilizer #2)	Standard foam stabilizer and thickener	Low cost shampoos or bubble baths • Liquid dish detergents • Lotion-type shampoo concentrates
COCONUT DIETHANOLAMIDE (Surco Coconut Condensate)	Predominantly non-ionic. Effective with cationics	Base material in high-active floor cleaner concentrates • Glass cleaner and rinse • Thickener
MIXED FATTY ACID DIETHANOLAMIDE CONDENSATE (Surfact-Co MA)	Can formulate without added coupling agent. Hard water resistance • Copious but unstable foam for rinsing ease in suggested formulations	General purpose cleaners • Wax strippers • High viscosity germicidal cleaners • High viscosity synthetic soap cleaners • Lotion-type floor cleaners
LAURYL SULFATES (Surco SLS, Surco AM-LS)	Derived from high lauryl content alcohol. Improved foaming and detergency	Rug and upholstery shampoos • Hair shampoos, clear and lotionized.
SURCO HDL BASE	Can be formulated with large quantities of Tetrapotassium Pyrophosphate for heavy-duty liquid detergents	Laundry detergent • dish detergent

For Other Surfactants Send for Price List

SURFACT-CO
BLUE ISLAND, ILLINOIS



BORAX GRANULAR—TECHNICAL . . .

AVAILABLE IN THESE SPECIAL MESHES AND GRAIN SIZES . . .

Name & Screen Designation	Typical Particle Size Range U. S. Standard Sieve No.		Screen Specification U. S. Standard Sieve No. When Packed	
Granular 8/40 (Special Mesh)	+ 8 + 40	Nil 96.8%	+ 45	min. 95%
Granular 8/60 (Special Mesh)	+ 8 + 60	Nil 80.0%	+ 8 +100	none min. 90%
Granular 30/60 (Special Mesh)	+ 30 + 60	0.5% 69.8%	+ 30 +100	max. 1% min. 80%
Granular 30/70 (Special Mesh)	+ 30 + 70	0.3% 71.0%	+ 30 + 40	max. 1% max. 20%
Granular 30/80 (Special Mesh)	+ 30 + 80	0.8% 76.6%	+ 30	max. 1%
Granular 30/100 (Special Mesh)	+ 30 +100	Nil 86.7%	+ 35 +100	none min. 85%
Granular 40/100 (Special Mesh)	+ 40 +100	Nil 89.0%	+ 40 +100	max. 0.5% min. 88%
Granular 40/140 (Special Mesh)	+ 40 +140	0.1% 88.8%	+ 35 +100	none min. 50%
Granular 40/200 (Special Mesh)	+ 40 +200	0.1% 84.1%	+ 30	none
Granular 60/200 (Special Mesh)	+ 60 +200	0.1% 66.7%	+ 60	max. 1%
Granular 80/200 (Special Mesh)	+ 80 +200	2.0% 67.6%	+ 60 + 80	none max. 5%

Powdered Hand Soaps are better performers when borax is part of their make-up. They work better in any water — cut grease quicker — and feel smoother. Our granular borax is free-flowing and 100% soluble. This material is now available to you in any of the many special uniform meshes listed at left. Samples, bulletins, or technical advice can be obtained from the sales office nearest to you. Write today!

U.S. BORAX & CHEMICAL CORPORATION

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- **CALIFORNIA** · 630 Shatto Place, Los Angeles 5
- **ILLINOIS** · 3456 Peterson Avenue, Chicago 45
- **GEORGIA** · 1145 Peachtree Street, Atlanta 9
- **MISSOURI** · 4150 Laclede Avenue, St. Louis 8
- **OHIO** · 5012 Euclid Avenue, Cleveland 3
- **PENNSYLVANIA** · 302 Wilford Bldg., Philadelphia 4

Give her the detergent she wants . . .

Custom-blend with TERGITOL Nonionics

To be certain that the products she buys are *yours*, custom-blend your detergents with TERGITOL nonionics. The product that outcleans and outshines competition is the one she'll favor; and TERGITOL nonionics can give your detergent the properties that fill all her exacting demands.

From CARBIDE you can obtain nonionics with properties ranging from complete oil solubility to complete water solubility. Also you can obtain information on blending these nonionics to give you the precise properties you want for your specialty products.

Here are two nonionics that should be of particular value to you—

TERGITOL NPX—a nonyl phenyl polyethylene glycol ether containing 10.5 moles of ethylene oxide, is ideal for the base of your all-purpose detergents and wetting agents. Its cloud point is in the 60 to 65°C. range, and it is compatible with soaps and other surfactants. TERGITOL NPX is soluble in many alcohols, ketones, glycols, glycol-ethers, and esters; and its stability is not affected by acids, bases, or salts.

TERGITOL TP-9—with 9 moles of ethylene oxide and a cloud point in the 51 to 56°C. range, is similar to NPX in its usefulness, and is designed for use in water at less than 125°F.

The CARBIDE Technical Representative in your area will be happy to discuss your special requirements with you. Give him a call and see what a customized formula can do for your products. Or write: Union Carbide Chemicals Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, New York.

TERGITOL and UNION CARBIDE are registered trade marks.

UNION CARBIDE CHEMICALS COMPANY

UNION CARBIDE

as the editor sees it...

PERFUMES

Aerosol perfumes have given the perfume business a shot in the arm the like of which it has not received in ten years. It is no secret that ordinary "handkerchief perfumes" have been lagging during the past four or five years, The novelty and convenience of aerosol dispensing, plus some of the beautiful packages which have come to market, apparently have captured the imagination of the feminine user. In fact, it seems to us that aerosol perfumes have taken over a mighty good share of the perfume market.

James Moyer of Lord & Tavlor, New York, in an address before the Toilet Goods Association, recently outlined the unusual success of the aerosol perfumes and how they had more or less revolutionized the market. He pointed out that all well-known perfume brands which had not already done so would be compelled to add an aerosol to their lines. Or fall by the wayside. After noting the success of the aerosol products, it is difficult not to agree with this prediction. The tangible evidence of a really expanding market is right before us.

* * * * *

DETERGENT USE

The belief that detergent and soap use has more or less become stabilized at current levels and is not likely to grow appreciably in the years ahead is to us erroneous. We feel that the influences which brought about an expansion in per capita soap use twenty or thirty years ago are still with us. We do not feel that we have reached the zenith in cleanliness in either our persons or our surroundings. We believe that there is still a great deal of room for improvement,—and that improvement is bound to come.

In a paper by Dr. Foster Snell and Dr. Cornelia Snell, the well known detergent authorities, before the American Chemical Society at its latest meeting in Cleveland, they took the stand that we had reached the top in detergent and soap use, that 25-28 pounds per capita was the ultimate in use and is not expected to change much in the future. They feel that any increase in detergent consumption will come from population growth, not from greater use per capita.

After traveling this land of ours, we conclude that there are still many areas where the unwashed predominate, where detergent use might be doubled. We believe that in some areas detergent consumption is 15-20 pounds per capita and that in time this will tend to come up to the average. At the same time, we feel that in areas where consumption is 30 pounds or more, it is not likely to decline. Well we know that some of our top authorities in the soap industry agree with Drs. Snell, but we still fail to note any evidence to support their predictions. We hold that the growth potential is there just as it was 20 or even 50 years ago.

* * * * *

RETIREMENT

With the retirement of Edward Little as Colgate chairman after fifty-eight years, an era in soap selling leaves its mark on American industry. Little came up through the sales ranks as did several other top soap men of our day. He was one of the famous triumvirate which also included Richard Deupree of P&G and the late Frank Countway of Lever. These three men did more to advance the cause of soap selling than any previous influence in the history of the industry. These men sold soap. They spent millions for advertising, but they really sold soap. Their competitive battles for the soap market added immeasurably to the health and cleanliness of the nation.

Ed Little started in 1902 in the South as a Palmolive salesman. He fought his way to the top of the company through two mergers. He was known as a hard taskmaster, but a fair one. He supplied the dynamic leadership which the company needed when he took over and guided it to its period of greatest expansion and success. Now, he steps aside to let the younger genera-

chemicals on the move... for you

Modern chemistry has created hundreds of new and better formulations to keep pace with America's stepped-up personal needs. For cleanliness, soaps and detergents are measured in billions of pounds each year. Every day brings new chemical specialties to make our lives easier and better.

To meet varied requirements of these processors and formulators, Olin Mathieson is on the move. Currently we are increasing caustic/chlorine production in important growth areas — adding new plant facilities for the production of polyols — marketing a wide range of surfactants of outstanding performance. Olin Mathieson offers quality phosphates, alkalies, organics, and specialty chemicals in volumes to provide for changing market conditions.

Change is the challenge, and the future depends on the ability to predict change and prepare for it. As a step in providing for your future, let us review your chemical requirements now. In terms of future—or present—developments, our experience in chemical supply can be useful.

7044-A

Olin Mathieson
CHEMICALS DIVISION, BALTIMORE 3, MD.

CHEMICALS

MATHIESON

Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Soda • Chlorine • Formaldehyde • Hydrazine and Derivatives • Hypochlorite Products Methanol • Muriatic Acid • Nitrate of Soda • Nitric Acid • Soda Ash • Sodium Chlorite Products • Sodium Methylate • Sulfur (Processed) Sulfuric Acid • Urea • Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Ethanolamines • Glycol Ethers • Surfactants • Ethylene Dichloride

BLOCKSON

Trisodium Phosphate • Trisodium Phosphate Chlorinated • Sodium Tripolyphosphate • Tetrasodium Pyrophosphate • Sodium Hexametaphosphate Monosodium Phosphate • Disodium Phosphate • Sodium Acid Pyrophosphate • Tetrapotassium Pyrophosphate • Sulfuric Acid • Hydrofluoric Acid Sodium Silicofluoride • Sodium Fluoride • Teox® 120 Surfactant

tion take over, in reality a new era in the soap business. He leaves an indelible mark on the soap industry, not to mention the advertising fraternity of Madison Avenue.

* * * * *

POOLS

If the swimming pool craze does not abate, about twice as many of them will be sold this year as last. It seems to us that about everybody and his Uncle Joe (1) already has a swimming pool of one sort or another, (2) is in the throes of installing one, (3) is toying with the idea of building one. Now, it would seem that swimming pools, public or private, present the problem of sanitation. And this involves the use of various and sundry chemicals to keep the pool waters clean and clear so that little Petunia and her neighborhood pals can practice to become Olympic champs free from the perils of germs, algae and other organisms.

Already, the chemical specialties manufacturers have rushed to the aid of pool owners with a multitude of products designed to keep the waters pure, safe and sanitary. For the 1961 season, we have a hunch that there will be a lot more products added to the list. In reality, it's a brand new market, one that didn't exist at all a few years back. And, as we said, if the pool craze keeps on spreading, it could turn into a nice big market come next year. For those who have other products which are dragging their feet, it might be worth looking into. It could be a profitable field as well for it would seem that anybody with money enough to build a swimming pool would be rich enough not to bicker about the price of things to keep it sanitary.

* * * * *

EUROPE

As the European Common Market becomes a reality, we feel that there is no question but that it will bring a higher standard of living and a true mass market in the participating countries. The recent Arden House Conference on *ECM and the American Chemical Industry* saw "Principal growth opportunities . . . in chemicals related to the improvement of living conditions." To us this points the finger directly at all sorts of personal and household chemical specialties and at automotive specialties as well.

The American manufacturer of household chemical specialties who looks ahead might envision the eventual invasion of the domestic market by European specialties. Lower wages and harder work abroad combined with mass production and mass marketing techniques could pose Europe as a direct threat to be reckoned with in the future. For the American manufacturer, it's worth pondering. Should he try for a slice of these new European opportunities through export, through manufacture in ECM areas, or by licensing Europeans not yet in the specialties business?

To date, chemical specialties have met little or no foreign competition. The future might bring just that. Mental speculation on what to do in the years ahead might not be amiss.

* * * * *

LABELS

Who writes the label directions on chemical specialties? In some cases, the advertising department has the final say, in others the legal department, or the sales manager. The research boys quite frequently prepare the initial draft, which is scrutinized or given a final polishing by one or more of the other three groups.

Clear, easily understood label directions can contribute to the success of a product. The director of research of a sizable chemical specialties outfit recently told us that nearly 95 per cent of all product complaints were traceable to the failure of the user to follow directions. We suspect that the fault may not lie altogether with the product user. Too often, in his haste to get a product on the market, the manufacturer slaps a badly written label on the package and lets it go at that.

Sometimes, we feel, labels are written as though they were *not* meant to be read. How else can you explain the verbose and involved instructions in 6 point type that appear on the labels of too many chemical specialties? If labels are designed for reading by the user they must be seen through the eyes of the user. For this reason, the advertising manager, and the sales manager sometimes are too close to the product to view it as the user would. In addition to getting advice from all these sources, it might be wise to call in a typical user or two and see if the directions make sense to him.

Once in a blue moon a really fragrant synthetic arrives—Lilial—Givaudan's contribution to floral naturalness!* *Lilial*—a pure aldehyde with an intense and diffusive note that recalls linden blossoms, with the emphasis on fragrance, represents a new high for synthetics in perfume elegance.

Lilial has remarkable tenacity and lends unmatched floralcy, intimate warmth and unique naturalness to almost any composition. On a perfume blotter it lingers for more than a month.

Unusually stable in soap, *Lilial* is long-lasting and diffusive. It is available in quantity—at a moderate price. No one synthetic has ever presented more desirable qualities to the perfumer.

Samples and technical data are available upon request.

*U. S. Pat. No. 2,875,131—Trademark Reg. U. S. Pat. Off.

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.

321 West 44th Street
New York 36, N. Y.

as the reader sees it...

Bintner's Bouquet

Editor:

For your very generous three page story of my company in the June issue of *Soap and Chemical Specialties*, my sincere thanks.

I have worked hard and enjoyed the work but seeing the results graphically depicted is a delightful experience too.

It was "extra" kind of you to print Mr. Robert W. Glenn's letter in your July issue, under — as the reader sees it . . . I'm hopeful that all my customers, associates and friends have an identical conception of me.

Frederick C. Bintner,
Independence Chemical Co.
Gloucester City, N. J.

—★—

Plough Mixer

We have read the article entitled "Washing Products Sans Spray Drying" in the May issue of *Soap and Chemical Specialties*. In this article a machine is mentioned which you call "Plough Mixer," and we wonder whether you could let us know who makes this type of mixer and also give us details on the machine if you have any available.

Industrial Chemical Products, S.A.
Johannesburg,
South Africa

Although we are not familiar with the "plough mixer" mentioned by Dr. Davidsohn in his article, we have written to him for details as to its maker, operating principles, etc. As soon as we hear from him we will be glad to pass the word along to any of our other readers who may be interested in the unit. Ed.

—★—

Revises Aerosol Book

Editor:

You will no doubt be intersted to learn that the first edition of our book is now out of print. We have recently completed the manuscript of the second edition which is due to be published in the fall of this year. This second edition contains additional material on compressed gases, on pharmaceuticals and a new section on law considerations, embracing a patent bibliography and details of laws and regulations pertaining to the industry.

I would be grateful if you could publish a note to that effect. At the same time you may care to mention that I am one of the lecturers at the Munich Congress of the German Society of Cosmetic Chemists, the subject being: "The importance of spray patterns in cosmetic pressure packs."

A. Herzka,
Pressurized Packaging Consultants, Ltd.
London, England

Williams Mug Soap Deal

J. B. Williams Co., New York, recently announced that its mug soap is being offered to retailers on one order only on a "1 Free with 11" basis. Deadline for the deal is August 31.

—★—

Plasti-Kote Campaign

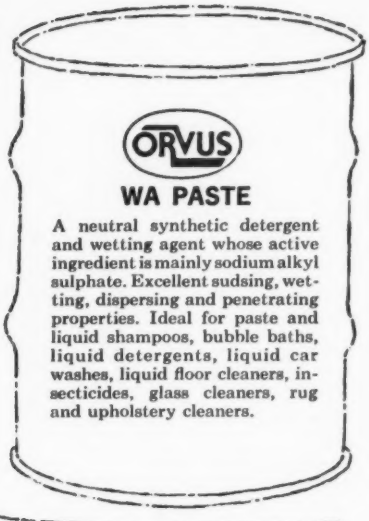
A merchandising campaign using giant-sized replicas of aerosol spray paint cans and consumer trade advertising was announced last month by Plasti-Kote, Inc., Cleveland aerosol paint makers.

The can is a portable merchandising kit designed so each Plasti-Kote salesman can carry it with him, and may also be used as a point-of-sale display. There is one size, 18 inches high by six inches in diameter, for company salesmen and wholesalers, and another, 13½ by 4½ inches, for retailers. Plasti-Kote story is inside can.

King-sized aerosol spray paint container being used by Plasti-Kote, Inc., Cleveland, as portable merchandiser for its salesmen. Unit, 18 inches tall x six inches in diameter, may also be used as point-of-sale display. Top of can is removable for access to full information on the company's promotion.

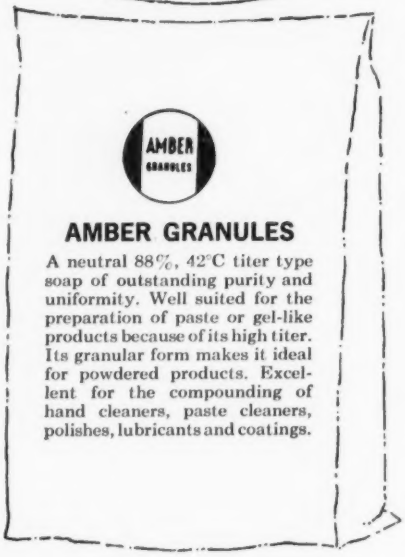
THERE'S A PROCTER & GAMBLE PRODUCT FOR EVERY FORMULATION NEED

A neutral nonionic synthetic detergent of the 100% alkyl-phenol ethylene oxide condensate type. A light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties offer excellent performance in liquid detergents, sanitizer detergents, self-emulsifying solvents, laundry detergents, glass, textile and dairy cleaners, insecticides, and bottle washing compounds.



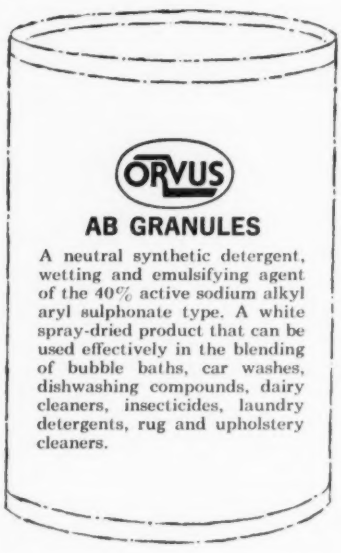
WA PASTE

A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium alkyl sulphate. Excellent sudsing, wetting, dispersing and penetrating properties. Ideal for paste and liquid shampoos, bubble baths, liquid detergents, liquid car washes, liquid floor cleaners, insecticides, glass cleaners, rug and upholstery cleaners.



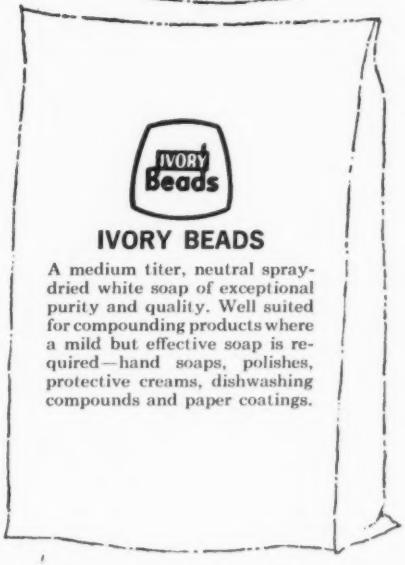
AMBER GRANULES

A neutral 88%, 42°C titer type soap of outstanding purity and uniformity. Well suited for the preparation of paste or gel-like products because of its high titer. Its granular form makes it ideal for powdered products. Excellent for the compounding of hand cleaners, paste cleaners, polishes, lubricants and coatings.



AB GRANULES

A neutral synthetic detergent, wetting and emulsifying agent of the 40% active sodium alkyl aryl sulphonate type. A white spray-dried product that can be used effectively in the blending of bubble baths, car washes, dishwashing compounds, dairy cleaners, insecticides, laundry detergents, rug and upholstery cleaners.



IVORY BEADS

A medium titer, neutral spray-dried white soap of exceptional purity and quality. Well suited for compounding products where a mild but effective soap is required—hand soaps, polishes, protective creams, dishwashing compounds and paper coatings.

ES PASTE

A specially developed synthetic detergent whose active ingredient is mainly modified sodium alkyl sulfate. Offers exceptional efficiency and stability over a wide range of operating conditions. Its excellent wetting, penetrating, sudsing, dispersing and emulsifying properties make it well suited for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners.

Procter & Gamble will gladly supply you with information on how you can save time and money when you formulate with Procter & Gamble products. You can also get technical help in connection with their use by writing to:

Procter & Gamble

BULK SOAP SALES DEPARTMENT
P. O. BOX 599, CINCINNATI 1, OHIO

K LIQUID

A modified, highly concentrated ammonium lauryl sulphate—modified for increased sudsing and mildness. Exceptionally low cloud and pour points. Highly fluid and easy to handle. Ideal for clear liquid shampoos and liquid detergents where high foaming is required.

Detergents . . . Cleansers . . . Soaps . . .

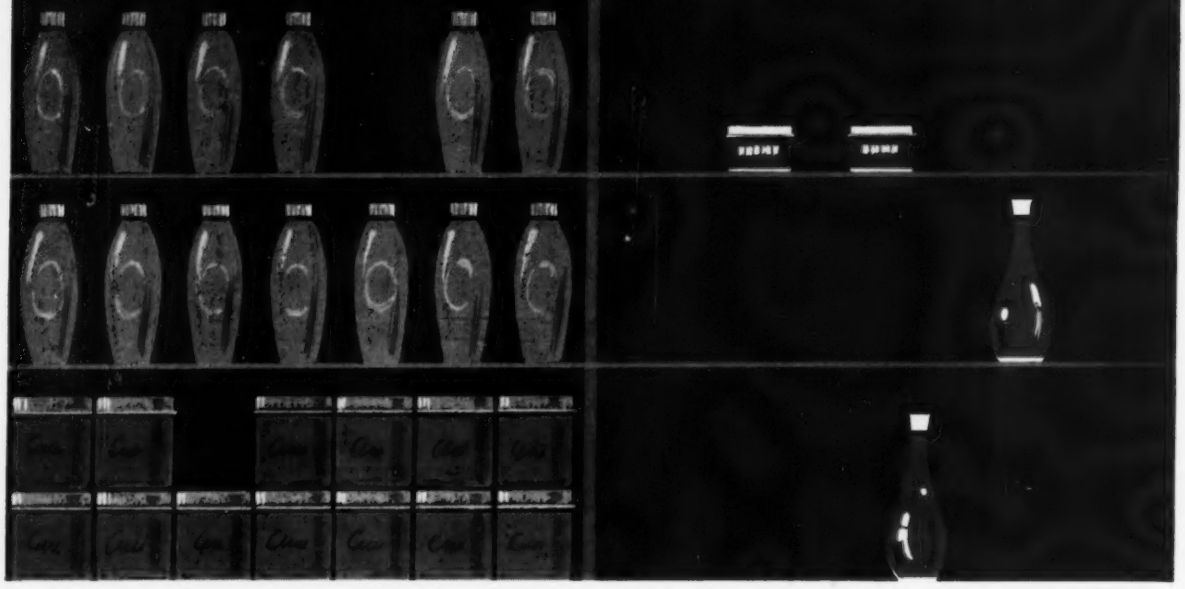
All-purpose household liquid detergents, such as new "Fels Naptha Cleaner," made by Fels & Co., Philadelphia, spurred on by a heavy barrage of advertising and promotion, are meeting with widespread consumer acceptance. A method of evaluating these hard surface cleaners is described in article starting on page 51.

Aerosols
Detergents
Dishwashing compounds
Floor scrubs
Glycerine
Hand cleaners
Laundry soaps
Liquid soaps
Medicinal soaps
Metal cleaners
Potash soaps
Scouring cleansers
Shampoos
Shave products
Soap powders
Starch
Steam cleaners
Textile detergents
Toiletries
Toilet soaps and other detergent and soap products

EMERSOL® OLEIC ACIDS

the difference between

SIT & SELL



Shelf space is valuable. Your product must move or it's moved out. Once out, it's next to impossible to get it back on the shelf. That's why the extra quality of the Emersol Oleic Acids is so extremely important to your profit picture — especially since they cost no more.

Here's what you buy at no extra cost with Emersol Oleic Acids. You get unsurpassed whiteness which reflects in the eye appeal of your product... invites customers to "reach for me." Outstanding color stability which assures that your product will retain its "buy appeal" through storage, shipping, shelf life, and use. High immunity to oxidation which keeps your product pleasant smelling and delicately colored through many cap removals. And you are assured of these "extras" with every shipment of Emersol Oleic because Emery's strict quality control never wavers.

Find out how you can add "sell" to your product at no extra cost. Request Emeryfacts booklet titled "Emersol Oleic Acids." Write Dept. S-8.

Emery FATTY ACID SALES DEPT., CAREW TOWER, CINCINNATI 2, OHIO ... *a little extra everything except price*

VOPCOLENE DIVISION, LOS ANGELES — EMERY INDUSTRIES (CANADA) LTD., LONDON, ONTARIO — EXPORT DEPARTMENT, CINCINNATI

HARD SURFACE CLEANERS

A simple, convenient method devised to evaluate hard surface, liquid cleaners. Method is reproducible, highly sensitive.

By Raymond L. Liss and Thomas B. Hilton*,
Monsanto Chemical Co.
St. Louis

THE recent aggressive promotion of liquid household cleaning products has made apparent the importance of measuring soil removal from hard surfaces. Although these liquid formulations are touted for a wide spectrum of applications, the greater proportion of practical usages involves the treatment of hard surfaces. These surfaces include vinyl, vinyl-asbestos, asphalt, linoleum, rubber, and concrete floors; wood, metal and plaster painted surfaces; porcelain; ceramics; glass, and plastics.

The soils to be removed from these miscellaneous substrates are the materials normally encountered as residues in household living. Typically, the composition of soils includes mixtures of inorganic solids, pigments, and organic materials such as fats, greases, oils, foods, and food additives. Papers presented in the past describe the proximate composition of some of these typical household soils (1, 2).

It is realized that a wide variety of substrates containing the spectrum of soils could be utilized in the evaluation of hard surface cleaning formulations, but one is immediately confronted with the immensity and diversity of such a program. Even the use of a selected panel of individuals to evaluate cleaning effects in a single use application involves considerable time and manpower. Such a panel evaluation would be too unwieldy and time consuming for use in any extensive formulation and evaluation program. It is apparent that a rapid, correlative, reproducible method would be of value in such a program of endeavor.

Previous Methods

Federal Specification P-C-431a of September 14, 1954 entitled *Cleaning Compound, Synthetic Detergent, Non-Abrasive, All Purpose* (3, 4, 5) describes a method for the evaluation of hard-surface cleaning. However, this method involves considerable time and effort in the preparation of the substrate and application of soil. The method was found not to be very sensitive and reproducible, and therefore requires extensive replication and retesting to develop evaluation data. Several other methods described in the literature (6, 7) were evaluated, but were also found not to be entirely satisfactory for this specific application.

An investigation of the method described in P-C-431a did indicate that it possessed many valuable features, and utilized equipment that was usually available in most detergent and surfactant evaluation laboratories. For these reasons it was decided that many of these desirable features might be incorporated into a revised method.

One of the most time consuming portions of the method involves primed and painted metal test strips. It was estimated that 10 man hours and an elapsed minimum time of 16 days were required for the complete preparation of a dozen new test panels. This immediately indicates the amount of expended effort and inconvenience necessary to carry out a large scale formulation and evaluation program.

Another item in the method that was found wanting was uniform and reproducible application of soil on the test panel. This is reflected in the non-uniform appearance of the final washed panels which make quantitative determination of differences difficult, if not impossible. This is illustrated in Figure 1, showing some P-C-431a test panels that were washed with typical household cleaning products. Investigation of reasons for this non-uniform and non-reproducible soil removal indicated the following probable causes: variations in painted panel surface; non-uniformity in thickness of soil layer; and non-uniformity in adherence characteristics of soil on panel surface.

The soil, which consists of a mixture of inorganic pigment, pe-

*Paper presented during 46th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 19, 1960.

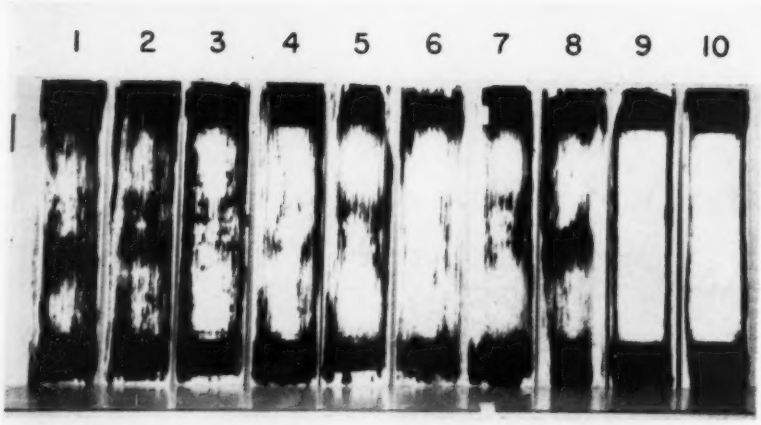


FIGURE I. FEDERAL SPECIFICATION P-C-431a TEST PANELS WASHED WITH TYPICAL LIQUID HOUSEHOLD CLEANING PRODUCTS.

troleum solvents and oils, and vegetable fat, is typical and practical for this evaluation as will be shown later under the discussion of correlation of the method with practical household panel evaluations.

Revised Method

A revised method similar to Federal Specification P-C-431a for evaluation of hard surface cleaners has been developed. The detailed procedure is completely described and included in the Appendix.

The soil has been modified only slightly to promote ease and uniformity of application to the substrate. This was accomplished by decreasing solvent content to adjust viscosity. Satisfactory uniformity of soiled panels could only be attained when special procedures were used to distribute the soil. An adjustable drawing blade, ("doctor" blade) was found to be quite effective for distribution of a proper soil load in a uniform manner.

To eliminate excessive time and effort involved in preparing metal test strips, alternative substrates were examined. Such materials as linoleum, CSMA standard asphalt tile, and vinyl-asbestos were rejected for one reason or another. A white vinyl tile (Armstrong "Corlon" No. 1460) was found to give reproducible soil removal values and required little or no preparation of its surface before use. The standard 9" x 9" tiles were found convenient to use, providing two replicate panels by merely cutting in two.

Baking temperature of soiled panels was lowered from 105°C. to 80°C. This prevented non-uniform and often excessive penetration of soil ingredients into substrate surface resulting in poor reproducibility of washed panels.

Actual washing of soiled vinyl panels is carried out with a Straight-Line Washability Apparatus[1] as described in the Federal Specification. A minor substitution in the sponge type was made in the interest of uniformity; a photographic grade fine grain cellulose sponge[2] cut to fit the standard holder was found to be more satisfactory.

After panels were cleaned with a test solution and air-dried, reflectance was measured with a reflectometer with an amber tristimulus filter. Specific areas were measured on each panel by use of a reflectometer template to prevent any discrimination or bias in choice of areas selected for measurement.

Results which are a measure of resultant panel reflectance are expressed as "percent efficiency" or "percent comparative cleaning efficiency" of any convenient or desired standard formulation. This latter method of expression of results allows a direct comparison of a product with a standard so that variations between tests are minimized.

Reproducibility, Sensitivity

This modified method has been demonstrated to be quite re-

(1) Can be obtained from the Henry A. Gardner Laboratory, Inc., 4723 Elm Street, Bethesda, Md.

(2) Size 6A-F, manufactured by E. I. du Pont de Nemours and Co., Inc., Wilmington, Del.

TABLE I

A COMPARISON OF REFLECTANCE DATA FOR ONE HOUSEHOLD CLEANER

TEST No. 1			TEST No. 2		
PANEL 1	PANEL 2	PANEL 3	PANEL 1	PANEL 2	PANEL 3
61.1	60.2	61.0	59.0	60.2	59.8
61.0	60.2	61.7	59.8	60.6	60.3
61.1	60.4	61.2	59.8	60.8	60.9
60.1	60.0	61.2	59.2	59.8	59.1
$\bar{R}$	60.8			59.9	
$s^2(R)$	0.18			0.41	

$t = 0.035$

$t_{0.05,22} = 2.074$

% CLEANING EFFICIENCY	92.1	90.6

producible with different operators over a considerable lapse of time. A typical evaluation of a product using different lots of panels and soils and carried out at different times is shown in Table I. Reflectance data from Test No. 1 were compared with that from Test No. 2 using Student's "t" Test. This comparison indicates no significant difference at the 95% confidence level.

Actual compilation of many replicated evaluations has shown the overall reproducibility of the method to be less than ± 1.4 comparative cleaning units for efficient cleaners at the 95% confidence level.

Figure 2 illustrates panels washed with six proprietary liquid household cleaners. It is noted that differences in performance are readily detectable. Further studies have indicated the sensitivity of the method by increasing or decreasing the amount of organic surfactant or inorganic builder in a typical formulation. Figure 3 illustrates the differences in panel appearance with an increase in active level in a formulation of constant builder content. The value of the method in optimization or cost comparison studies is quite obvious.

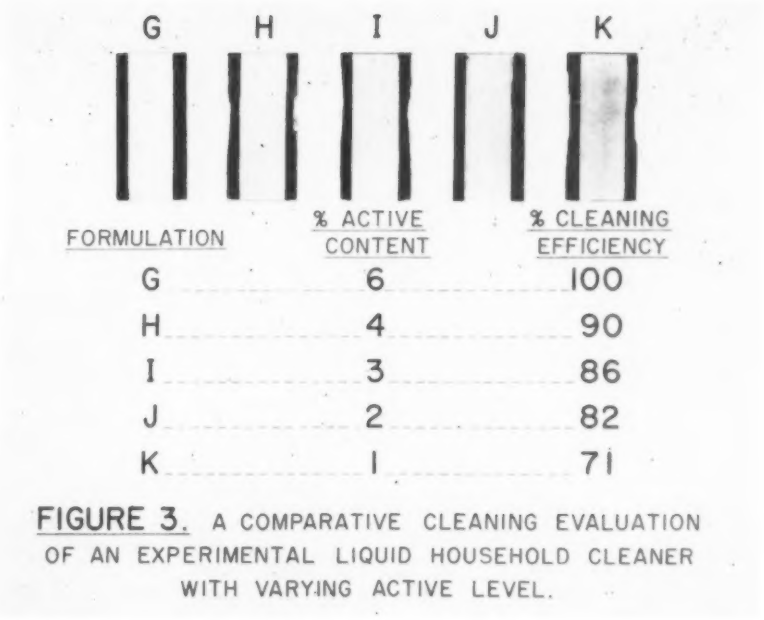


FIGURE 3. A COMPARATIVE CLEANING EVALUATION OF AN EXPERIMENTAL LIQUID HOUSEHOLD CLEANER WITH VARYING ACTIVE LEVEL.

Correlation

Correlation studies of the evaluation method versus actual practical usage of household cleaners has been carried out by the use of housewife panels. Products having differences in cleaning ability were coded and given in pairs to a statistically adequate panel of householders for comparison. Various household surfaces such as floors, walls, plastic, rubber, glass, and concrete were suggested and used in determining the cleaning abilities of the products. Correlation between panels and the laboratory method were highly satisfactory and statistically significant.

Summary

A simple, convenient method is presented for evaluating hard surface detergency (see Appendix). The method has been shown to be reproducible, sensitive to the detection of minor formulation changes, and correlates with actual household usage. The sensitivity of the method is illustrated by a comparison of proprietary household cleaners and by showing the effects of varying the active content in a typical household cleaner.

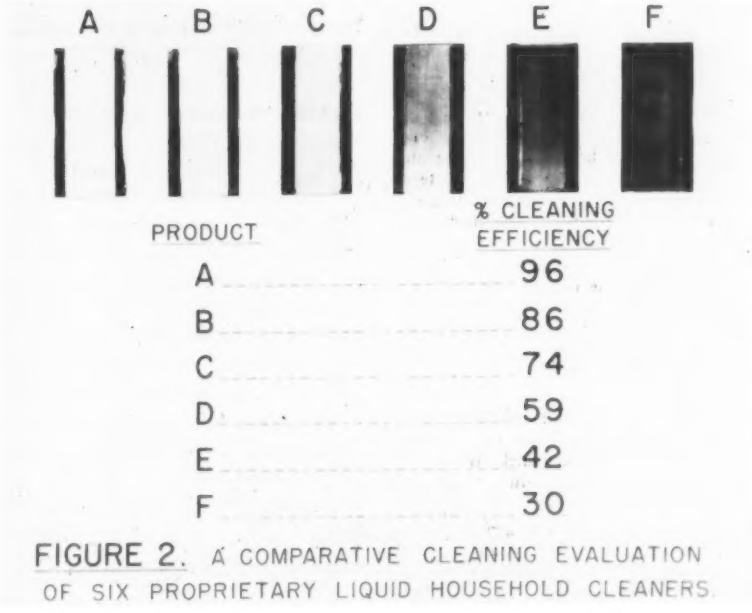


FIGURE 2. A COMPARATIVE CLEANING EVALUATION OF SIX PROPRIETARY LIQUID HOUSEHOLD CLEANERS.

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3. Federal Specification P-C-431a, Amendment-1, February 29, 1956, Cleaning Compound, Synthetic Detergent, Non-Abrasive, All Purpose.
4. Interim Federal Specification P-C-00431b, November 8, 1956, Cleaning Compound, Synthetic Detergent (Non-Abrasive).
5. Interim Federal Specification P-C-431b, Revision-1, February 6, 1957, Cleaning Compound, Synthetic De-

tergent (Non-Abrasive).
6. Harris, J. C., Sullivan, M. R., and Kamp, R. E., *Soap & Sanit. Chemicals, 26,* No. 7, 32 (1950).
7. Fineman, M. N., *ASTM Bulletin,* No. 192, 49(1953).

Appendix

Procedure for Evaluating Liquid Hard Surface Cleaners

A. Apparatus and Materials

1. Straightline Washability Apparatus (Henry A. Gardner Laboratory, Inc., Bethesda, Md.)
2. Reflectometer, equipped with an amber tristimulus filter.
3. Standard white plaque (reflectance approximately 80%.)
4. Armstrong "Corlon" vinyl tile, 9" x 9" x ⅛", No. 1460, plain white, cut to 4½" x 9" panels.
5. Flat pan, approximately 2" x 6" x 12".
6. DuPont photographic grade cellulose fine grain sponges, type 6A-F.
7. Fifty ml. buret.
8. Boston-Bradley adjustable blade ("doctor" blade) (Henry A. Gardner Laboratory, Inc., Bethesda, Md.)
9. Water of 150 ppm hardness.
10. Two vinyl tile squares, 4½" x 4½".
11. Template of vinyl tile, 4½" x 9", with four evenly spaced holes for making reflectance readings.
12. Forced draft oven, ± 0.5°C.

B. Soil

	Parts (by weight)
Metallic brown (Fed. Spec. TT-M-251)	20
Kerosene	12
Stoddard solvent	12
Liquid petrolatum (USP)	1
Lubricating oil (SAE-10)	1
Hydrogenated vegetable shortening	1

C. Soiling Procedure

1. Dissolve oils and shortening in kerosene-Stoddard solvent and then disperse metallic brown in this solution.
2. While bulk lot of soil is continuously stirred to insure uniformity, an approximate 4 g. sample is removed and applied along entire length of vinyl panel. "doctor" blade, set at 0.004 in., is used to provide an even spread.
3. Air dry soiled panels for 30 minutes.
4. Dry soiled panels in forced draft oven set at 80°C. for 15 minutes.
5. Allow panels to cool to room temperature and use within 24 hours.

D. Wash Procedure

1. Make up one liter of a 2% cleaning solution ("as is" basis) in 150 ppm water and use at 25°C. or other defined room temperature.
2. Cut sponge to fit Washability Apparatus sponge housing box (3¾" x 2⅞"). Thickness of wet sponge is 1-5/16". Total weight of sponge box and dry sponge should be one pound ± ½ ounce.
3. Soak test panel for 60 seconds in wash solution adequate to cover entire panel.
4. Wet sponge with 25°C. tap water and squeeze damp-dry by hand.
5. Add 50 ml. of wash solution to damp-dry sponge and insert into sponge housing box.
6. Center test panel on Washability Apparatus by use of two 4½" x 4½" pieces of vinyl tile, one on either end of test panel.
7. Start Washability Apparatus, set at one stroke per second (a complete cycle back and forth is two strokes), while dripping wash solution from a buret onto the center of test panel.
8. Time wash operation so that 12 ml. wash solution drips onto panel during wash period.
9. Wash panel for 100 strokes.
10. Stop apparatus.
11. Remove washed panel and rinse under a light stream of 25°C. tap water.
12. Drain water from panel and immediately replace on apparatus in a reverse direction.
13. Rinse sponge in 25°C. tap water, squeeze damp-dry by hand, and replace sponge in box with unused side facing test panel.
14. Repeat wash cycle and rinse panel as before.
15. Allow washed, rinsed panel to air dry.
16. Make triplicate runs for each cleaning solution tested, using a fresh sponge each time.

E. Cleaning Efficiency Measurements

1. Percent cleaning efficiency

$$(\%\ \text{C.E.}) = \frac{R_1}{R_2} \times 100$$

R_1 = Reflectance of unsoiled, unwashed panel
R_2 = Reflectance of soiled, washed panel

2. Percent comparative cleaning efficiency

$$(\%\ \text{C.C.E.}) = \frac{\%\ \text{C.E.}_x}{\%\ \text{C.E.}_{\text{std.}}} \times 100$$

(Percent comparative cleaning efficiency may be used to relate all cleaning efficiencies within one test to an included standard and is useful for comparing reuslts from one test to another).

3. Reflectance measurements are made with the Reflectometer utilizing a vinyl template 9" x 4½" with four evenly spaced holes. Four measurements are made to obtain panel reflectances.

F. Results

A. Percent cleaning efficiencies or percent comparative cleaning efficiencies of individual panels are averaged to give a value for each cleaner.

B. Statistical analyses of previous results can be used to apply estimated precision limits on values obtained:

Over-all precision limits = ± 1.7 reflectance units

$$= \frac{\pm 1.7}{R_1} \times 100 \text{ units \% C.E.}$$

$$\pm \frac{1.7}{R_1} \times 100$$

$$= \frac{}{\%\ \text{C.E.}_{\text{std.}}} \times 100 \text{ units \% C.C.E.}$$

It has been found that when % C.E. values fall in the upper range, precision limits are narrower; and more precise comparisons should be based on this value as calculated from standard deviations of reflectance data in question.

The Student's "t" Test provides a convenient statistical method for calculating whether two cleaners are different.

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Benzotrifluorides Data

"Benzotrifluoride and its Ortho-, Meta-, and Parachloro Isomers" is the title of a new 12 page technical bulletin just issued by Hooker Chemical Corp., Box 344, Niagara Falls, N. Y. These compounds are now available for the first time on a commercial scale, according to Hooker.

Benzotrifluoride is suggested as an intermediate for the manufacture of bactericides, fungicides, insecticides, larvicides for textile application, and is recommended as an intermediate for a lampricide. The bulletin presents physical and chemical properties of each of the four materials, typical chemical reactions, toxicity data and shipping information. Over 40 literature references are included.

—★—

Aceto Chemical Bulletin

Aceto Chemical Co., New York, announced last month that a new 20-page bulletin describing "Ceramol" is now available. "Ceramol" is a specially formulated emulsifier for cosmetic and pharmaceutical applications. Chemically it is a blend of cetyl and stearyl alcohols, and higher alcohol sulfates supplied as ivory-white waxy flakes. Many suggested cosmetics and pharmaceutical formulations, and clinical details are included. To get the bulletin, write: A. J. Frankel, Aceto Chemical Co., 40-40 Lawrence St., Flushing 54, N. Y.

By Jean Sfiras*,
Roure Bertrand Fils et Justin Dupont,
Paris, France

Photo courtesy E. I. du Pont de Nemours & Co., Wilmington, Del.

Cologne Fragrance in Aerosols

THE perfume note known as "cologne" is composed of many fragrances derived from a mixture of citrus essences—bergamot, lemon, orange, and neroli. A glance at the composition of these essential oils will reveal that at least 80 different compounds contribute to create the highly complex odor known as "cologne." Some of these components are present in considerable proportions. These include linalol, linalyl acetate, limonene, dipentene, etc. Minute quantities or mere trace amounts may be present of geraniol, citronellol, nerol, nerolidol, farnesol, aldehydes C_8, C_{10}, and C_{12}, citral, citronellal, coumarin type compounds, and many others.

It is easy to see that by varying the proportion of any of the numerous ingredients an almost infinite variety of nuances can be achieved, all within the cologne note. For a little more firmness add linalol, either pure or as rose oil; citral, especially in the form of verbena, will lend freshness. Replacement of neroli—at least in part—by petit-grain gives a "green" shading and a lower price. A mixture of linalol and linalyl acetate, either pure or as lavender oil, added in minute amounts will yield a "green" top note. Nerolidol may be incorporated for a "rounded" fragrance. Many other shadings are possible.

If a deviation from the true cologne note is desired it may be combined with other flowery notes, with flowery/woody, ambered or sandal notes, such as rose, carnation, jasmin, chypre, vetiver, cedar, and others.

These perfumes – either as described or slightly modified for more body or increased staying power—can be dissolved in alcohol

A clear distinction is made between eau de cologne, an alcoholic solution of a cologne perfume concentrate, and a cologne type odorant for perfuming a number of products

*Paper presented at 250th anniversary celebration of the invention of eau de cologne, Santa Maria Maggiore, Italy, June 25, 1960.

Aerosol hair sprays are not as difficult to perfume as some products because they have a weak odor. Many cologne type fragrances, more or less modified, are suitable.

to yield colognes which may be applied in conventional form or as aerosols.

But odor complexes based on a cologne note have many other applications. They may serve to perfume such diverse items as soaps, insecticides, space deodorants, cosmetics, etc. Many of these specialties are marketed as aerosols and it is with the perfuming of these pressure packaged products that we are concerned here. As an introduction, however, we shall present some observations on pressurized packages in general and on aerosol eau de colognes in particular.

Actually we are dealing with two types of aerosols: (1.) Wet sprays which distribute the active ingredient in finely particulated form onto skin or hair. (2.) Space sprays for space deodorants or insecticides where the active ingredients are to remain air borne for an extended period. This second type is sometimes called the true aerosol.

Size of particles dispensed through the same valve can be varied by varying pressure inside container and particularly by modifying proportion of propellant incorporated in the formulation. Therefore, to obtain a wet spray usually 40 to 50 per cent liquified gas propellant is used, 80 to 90 per cent for a space spray.

Either nitrogen or liquified gas propellants (usually fluorinated hydrocarbons) may be used to load aerosol colognes. If pressurized with nitrogen, the container is usually filled to the half way mark and contains eight kilos of pressure. During use, pressure drops from eight to four kilos.

Loading with liquified gas propellants, we have so far worked with either propellant 114 (dichlorotetrafluoromethane) or with a 60/40 mixture of propellants 114 and 12 (dichlorodifluoromethane) in the following proportions:

Alcoholic perfume solution (2-3%)	40-60%
Propellant gas	60-50%

Aerosol colognes containing up to 80 per cent propellant are mentioned in the literature (*Schimmel Briefs* 195-196).

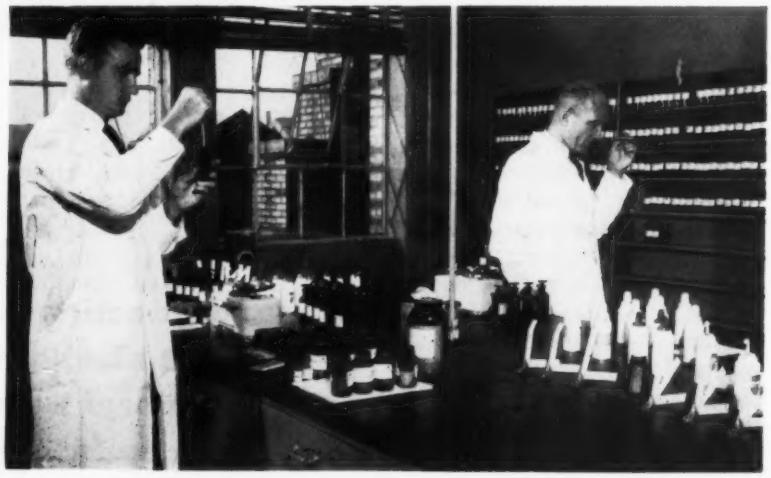
Solubility of certain perfume ingredients in fluorinated hydrocarbons varies greatly and may present problems. However, the presence of sufficient quantities of highly concentrated alcohol as cosolvent practically eliminates solubility problems in the case of colognes. An example of solubility trouble which may arise from time to time follows: A solution of cologne concentrate, alcohol, and propellant is quite clear when prepared. The following day slight clouding is evident and a few hours later flocculation appears. We know just one way to remedy the damage: The solution must be left for a few days, then chilled to between −2° to 0°C., and finally filtered. Containers must be filled with this filtered solution. This procedure is feasible; it is merely a question of setting up suitable apparatus.

Is a classic cologne less stable in an aerosol than in conventional form? Much has been written on this question. There is no general answer; each case is different, we believe.

Pressure dispensed colognes are frequently sprayed onto the skin, especially after bathing. A judiciously chosen mixture of propellants can minimize chilling of the skin.

A surface having the temperature of the human body (96.5° F.) is said to be cooled to the fol-

Perfumers seeking to determine if there is a difference in olfactory effect produced by same fragrance in conventional and aerosol form. Perfume is tested on blotting paper and in aerosol spray for comparison.



lowing temperatures by different propellants:

Propellant 12	7°C.
Propellants 12/11 (50:50)	8°C.
Propellant 11	11°C.
Propellant 114	19°C.

Chilling effect is further reduced by increasing distance between dispensing unit and skin. This effect is particularly pronounced in the case of sprays containing volatile components. A high ratio of propellants increases the chilling sensation.

Perfuming Insecticides

Aerosol insecticides are generally composed of 15 to 20 per cent active ingredients in solution and 85 to 80 per cent propellant. Solvents are usually petroleum derivatives. Most commonly used propellants are mixtures of fluorinated hydrocarbon propellants 11 and 12, butane, propane, methylene chloride, and possibly others.

These products exhibit a not very agreeable odor. An odorant is required which covers the disagreeable odor and at the same time endows the formulation with a fragrance pleasing to as many consumers as possible.

Furthermore, such a fragrance must create an impression of freshness. We know no fresher fragrance than cologne. Yet, cologne *per se* will not cover or mix well with the unpleasant smell of insecticides. Other complementary notes are required for satisfactory results.

When developing an odorant for this purpose one cannot start out with a cologne fragrance of the type dèscribed earlier in this paper. The price would be prohibitive. For such applications the perfumer must turn chemist and use his knowledge of the composition of citrus oils to formulate an inexpensive cologne fragrance. The task is not impossible. He has as his disposal limonene, dipentene, linalol, linalyl acetate, aliphatic aldehydes, citral, citronellal. There is no dearth of synthetic orange type odors. Recent synthetic compounds include even odors approaching that of petit-grain.

Hair Lacquers

Perfuming of hair lacquers is much easier, since product odors are weak. Many cologne type fragrances, more or less modified, are suitable for this purpose. These products are generally loaded with a 50/50 mixture of propellants 11/12, the propellant accounting for 40 to 50 per cent of the contents of the container.

Space Deodorants

These products do not deodorize the atmosphere of a room as their name would indicate. Actually they cover an existing undesirable odor by another stronger and more pleasant one. Most frequently these sprays are formulated from 10 to 15 per cent of perfumed solvent and 85 to 90 per cent propellant. A perfume based on a cologne note is very suitable for this purpose because it will create an impression of freshness.

Some formulators add to such preparations ingredients of a slightly antiseptic nature, others add lauryl methacrylate. According to American authors the latter has the following effect: Atomized in the air methacrylate is polymerized by oxygen in the atmosphere; the polymerisate either encloses in globules or adsorbs the airborne traces of compounds causing malodors.

Odor Sensations

Is there a difference in the olfactory effect produced by the same fragrance presented in conventional and in aerosol form? To answer this question one must spread the perfume compound on a small piece of blotting paper such as a perfumer's test strip and smell it. Then the same fragrance is sprayed from an aerosol loaded with a fluorinated hydrocarbon propellant and the odor inhaled in that form. Is there a difference? In most instances, yes. The difference grows with increasing proportions of liquified gas propellant or with finer atomization. We have verified this observation several times and V. DiGiacomo of Givaudan-Delawanna, Inc., New York, has reported the same observation in an article published in the *American Perfumer*.

The difference is qualitative, i.e. the fragrance of the perfume is different. Nothing can be said about odor intensity when comparing the olfactory sensation produced by a perfumed test strip and that produced by the atmosphere of a room in which a perfume has been sprayed. These impressions are not comparable.

On the other hand, it is possible to state that the intensity differs when two aerosols of the same perfume but of different particle size are sprayed in the same

(*Turn to Page* 103)

Arthur E. Johnston, assistant secretary of Colgate-Palmolive Co., New York, outgoing TGA president, chats at Poland Spring with Jean Despres, executive vice-president, Coty, Inc., New York, newly elected TGA president.

TGA Ponders the Sixties

THE outlook for sales of toiletries in the next decade is good. In fact, in the words of one speaker at the 25th annual convention of the Toilet Goods Assn., held June 26-29, at Poland Spring House, Poland Spring, Me., the outlook is "so vast, so various and so exciting that it stirs . . . (the) imagination."

The speaker, William L. Fort, manager of drug and toiletry sales and promotion for *Life* magazine, discussing the "Market of the Sixties," declared that this market will be more than just a "bigger version of the 'Fifties.'" His data, based on "careful projections of known economic facts," indicated that "not only will there be higher family incomes, but for the first time, upper income families will become a true mass market." Mr. Fort also predicted that "new households will show rapid gains, especially in the suburbs—but their composition will be greatly different from households of the 'Fifties.'"

Other economic fatcors that will affect the toiletries market in the 'Sixties cited by Mr. Fort were: "new age groups (especially teenagers and young married couples) . . . (who) will emerge as more important consumer markets in a growing changing population; . . . dynamic changes in the working force and in working habits; the number of white collar workers and women in business will rise sharply."

"There will be more leisure time, a higher level of education, and ever-higher standard of taste, and these in turn will produce a new kind of consumer—whose different spending patterns are going to be an important part of" the future of the cosmetics and toiletries industry, Mr. Fort declared.

A prediction that next year the toilet goods industry "will be caught in the middle of a real drive for a cosmetic pre-testing law" was made by Wallace Werble, publisher of *F-D-C Reports*. Mr. Werble was the second speaker of the first day's session. He stated that the toiletries and cosmetic industry is "getting along fine in Washington (D.C.) — better than most industries and certainly better than your rich cousin, the drug industry." He attributed this to the "quiet, efficient, able, and knowledgeable way . . . (T.G.A.) government relations are being handled by" Stephen L. Mayham, executive vice-president, and Fuller Holloway, general counsel for the association.

"This does not mean you have no problems in Washington," Mr. Werble cautioned. "You have them now — today! You will continue to have them like any other major business and industry."

He urged all those present to become more aware of the industry's "upcoming" Washington problems, and to become better acquainted with their Congressmen in advance of any actual need to seek their support in favor or opposition to legislation.

Speaking of a cosmetic pretesting law, Mr. Werble said that

it will "force" the toilet goods industry to "underpin" itself with a real research base. "This is one of the major elements needed to complete the cosmetic industry's transition to industrial maturity," Mr. Werble pointed out.

The fact that cosmetics were not included in the recently passed Federal Hazardous Substances Labeling Law was a "unique legislative victory" in Mr. Werble's opinion. He attributed this to the efforts of S. L. Mayham in negotiating an agreement with FDA to keep cosmetics out of the bill. Mr. Mayham did agree to the addition of a new amendment to the cosmetic section of the basic food, drug, and cosmetic law requiring special labeling on cosmetic package involving a reasonably foreseeable risk of injury from misuse, according to Mr. Werble.

Another important legislative fight won by TGA was that involving elimination of trademark protection against third-party imports of perfume and other goods. Bills designed to drop such protection were not voted out of the House Judiciary Committee.

The Kefauver probe into the drug industry, in Mr. Werble's opinion, means a "much tougher" Food and Drug Administration.

Charles F. Junod, Pacquin, Inc., business program chairman for 25th annual TGA meeting at Poland Spring House, Poland Spring, Me., with James O. Peckham, executive vice-president, A. C. Nielsen Co., who discussed "Consumer Trends in Toiletries."

In his address as TGA president, Arthur E. Johnston, assistant secretary of Colgate-Palmolive Co., New York, told the opening session of the convention that "we as advertisers face possible new laws" and "a much more strict enforcement of existing laws by the Federal Trade Commission and other government agencies." Mr. Johnston also indicated that during the course of the next year or two, "the association may find it necessary to support outside research on some of the so-called lipstick (or coal-tar) colors." Mr. Johnston added that the industry "may have problems on some of the other raw materials" it uses. He mentioned that "some people in Washington are looking askance at . . . (the use of sassafras oil) in foods." This oil is also used in some dentifrices, he said.

William L. Fort, manager, drug and toiletry sales and promotion, Life magazine, who discussed "The Market of the Sixties"; S. L. Mayham, executive vice-president of TGA; Wallace Werble, publisher of F-D-C Reports, speaker on "The Washington Scene," and Arthur E. Johnston, Colgate-Palmolive Co., New York, outgoing president of TGA.

A discussion of "Consumer Buying Trends in Toiletries," by James O. Peckham, executive vice-president of A. C. Nielsen Co., Chicago, was the opening feature of the second session of the meeting. Mr. Peckham predicted that U. S. consumer disposable income in 1969 would reach $495 billion. In that year, Mr. Peckham declared, consumers will spend 65 per cent more for toiletries than they spent in 1959. Sales of toiletries in drug stores will have risen 48 percent in the 10 year period; they'll be up 95 percent in food stores, and in other outlets sales of toilet-

(*Turn to Page* 181)

Little Retires as Colgate Head

E. H. Little steps down after 22 years as chief executive of Colgate-Palmolive Co., which he joined first in 1902. George H. Lesch, new president, is 28 year veteran.

EDWARD Herman Little, board chairman and chief executive officer of Colgate-Palmolive Co., New York, retired July 14, thus rounding out 58 years with the firm he had joined as a salesman in North and South Carolina in 1902. He had been head of the Colgate organization either as president, chairman, or both, since 1938.

Succeeding Mr. Little as head of a worldwide organization with sales of $600 million and profits of $25 million a year is George H. Lesch, who was elected as president last April. He is a veteran of 28 years with Colgate, having joined the home office accounting staff at Jersey City, N. J., headquarters in 1932. Mr. Lesch had been president of Colgate-Palmolive International, as well as a vice-president and director of the parent company prior to his elevation to the presidency of Colgate-Palmolive Co. in April. He had been elected president of the international company in 1957.

Born in Washburn, Ill., Oct. 10, 1909, Mr. Lesch attended the University of Illinois, from which he was graduated in 1931 with a B.S. degree with honors. Four years after he joined the Colgate-Palmolive organization, he became a member of the company's European auditing staff. In 1939 he was sent to the company's subsidiary in Mexico as office manager. In this position he was able to observe and participate in all phases of the subsidiary's operations. In 1948, he was made vice-president and assistant general manager. Mr. Lesch was elected in 1955 president and general manager of the Mexican company, one of the largest and most successful of Colgate's foreign subsidiaries.

By the end of 1955, he was named vice-president of Colgate-Palmolive International, in charge of sales and advertising for the United Kingdom and Europe.

Four years after he joined Colgate and Co., Mr. Little was transferred to Memphis, as district sales manager. However, because of illness (tuberculosis), Mr. Little resigned his position with Colgate. When he recovered, he became district manager of B. F. Johnson Soap Co., Milwaukee, later Palmolive Co., for the area west of Denver. In 1914, he was appointed district sales manager for the Pacific Coast.

In 1915, Mr. Little was appointed New York district manager, the company's largest territory, and in 1923 he was named eastern divisional sales manager. The following year he was transferred to the Chicago home office as general sales manager. In 1926, Mr. Little was appointed manager of Palmolive Co.'s foreign bussiness.

Following the merger of Palmolive Co. with Peet Brothers Co., Kansas City, Mo., Mr. Little was elected a director of the new Palmolive-Peet Co. in 1927. In the following year Colgate and Co., Jersey City, N. J., merged with Palmolive-Peet Co. to form Colgate-Palmolive-Peet Co. In 1933, Mr. Little was advanced to vice-president in charge of sales and advertising for Colgate-Palmolive-Peet Co., while he still was in charge of foreign operations.

E. H. Little was born in Charlotte, N. C., in 1881, the fifth child in a family of twelve. He attended schools in Mecklenburg County and Grey's Academy at Huntersville, N. C. He was married in Denver to Suzanne Heyward Trezevant, a granddaughter of Col. John Timothy Trezevant, a founder of Memphis, Tenn., and a daughter of a distinguished attorney of that city. Mr. and Mrs. Little make their home at the Sheraton-East Hotel in New York City. They have no children.

Active in the affairs of the Association of American Soap & Glycerine Producers, Inc., Mr. Little has served as president of the association, a member of its board of directors and a regional vice-president.

In 1938, when Mr. Little became president and chief executive officer of Colgate-Palmolive Co., worldwide sales of the firm were $100 million and profits for the preceding year were $782,000. During the 22 years that Mr. Little has headed the business, Colgate's sales have totalled more than $7 billion. Net profits in this period have aggregated $250 million, of which about $120 million has been paid to stockholders as cash dividends. In addition, the company has paid over 20 percent in stock.

Since the end of World War II, the worldwide outlays for plant expansion and modernization have totalled more than $180 million. Future expenditures on presently authorized capital projects are estimated at $41 million.

Last year, the company's common stock was split three-for-one. Adjusting for the split, dividends have risen from 16 ⅔ cents per common share in 1937 to $1.35 per share last year. During the

same period the equity per share of common stock increased from about $5 per share to more than $26 per share. Total net worth rose from $55 million to more than $210 million and net working capital from $36 million to $143 million.

Since Mr. Little has been head of the company the number of employees has increased from 9,600 to 26,000, and liberal benefits have been provided for employees and their families. The company's first pension plan was adopted in 1943 and benefits under the plan have increased several times since then. Group life insurance coverage was increased and a hospitalization plan was adopted in 1950. Earlier this year the stockholders approved a Savings and Investment Plan for the employees.

Davidson College, which awarded Mr. Little the honorary degree of doctor of laws in 1953, dedicated the Edward H. Little dormitory in his honor in 1957.

In the period from 1938 until Mr. Little's recent retirement as chief executive officer of the company, two other men have served for brief periods as president. Joseph J. McConnell, president of National Broadcasting Co., joined the company as president in 1953. He remained in the position until his resignation in 1955. More recently, William L. Sims II, a longtime veteran of the Colgate organization, was elevated to the presidency in 1955. Less than two years later he retired to "devote more attention to his citrus groves" in Florida. Mr. Little assumed once again both positions upon Mr. Simm's retirement.

Old-timers with the organization recall with fondness and admiration the fairness shown by the company in arranging for the transfer of key personnel when the company moved its headquarters from Chicago to Jersey City, N. J., in the year 1934. The company had representatives posted in major cities between Chicago and New York to render help to employees travelling by train and by car.

When he became president of Colgate-Palmolive Co. in 1938 Mr. Little succeeded S. Baynard Colgate, third in a line of sons of the founder of Colgate Co. who headed the organization.

Mr. Little never forgot that he was a salesman. In fact, there are some who feel he is "America's greatest salesman." Whether or not this accolade is justified, few will disagree that he was one of the country's truly great salesmen. He was a keen student of advertising and understood its force as a sales medium. Some say he was the first to really recognize television as a potent sales medium. His pioneering of the "Colgate Comedy Hour" has received credit for getting television off the ground as an entertainment medium, according to Joseph Kaselow, *New York Herald-Tribune* advertising columnist.

In commenting on Mr. Lesch's ascendancy to the chief executive officer position, Mr. Little said, "I am very pleased to turn over the reins of the company to Mr. Lesch. He has broad experience in every phase of the company's operations. Since 1932, when he first joined our organization, Mr. Lesch has achieved great success in every position he has held. Despite the fact that our business is one of the most competitive in the world, I am certain that under his leadership, the company will continue its growth and progress, and within the next few years will reach the one-billion dollar mark in annual sales which we have set as our goal."■

EDWARD HERMAN LITTLE

Behavior of nonaqueous

Dry Cleaning Detergents

By Ernestine Hirschhorn*
R. R. Street & Co.,
Chicago

Part II. Fabrics in Nonaqueous Detergent Systems

DURING the cleaning cycle a three phase system exists in the drycleaning washer. It consists of (a) the water carrying micellar detergent solution, (b) fabrics, and (c) the air phase above it.

(a) Moisture control

Fabrics exposed to the ambient air regain a certain amount of water, which differs greatly, depending on how fabrics were stored and on air humidity. As these fabrics are immersed in the detergent solution a water exchange will take place until equilibrium has been established between all phases. Only detergents which carry water in truly micellar form (dispersing into aggregates smaller than those visible under the ultramicroscope) are capable of speedy, reversible exchange of this water with complete safety to the fabric structure. According to Hess (14) moisture equilibrium of such systems in the drycleaning washer is obtained within a few minutes. After only one minute fabrics obtain 85% of their final water level.

It is impossible to predetermine the water regain of the different fabrics which enter the drycleaning washer simultaneously. The final water level of a drycleaning load would therefore vary, resulting in very uneven performance from batch to batch. Loads cleaned at low moisture level would show very poor water soluble soil removal; loads containing excessive amounts of moisture would show wrinkling and shrinkage of the fabrics. Thus procedures are required which will enable the cleaner to keep the water content of solvent and fabrics at the desirable, constant level for every load and during the entire cleaning cycle.

For a given type and concentration of detergent best cleaning results with safety to fabrics are obtained by keeping water regain of rayon in the bath at between 14-15%. Control at a level of maximum safety is achieved by replenishing the water content of the micelles continuously during the cleaning cycle. This micellar water in turn exchanges with the moisture regain in fabrics until the 14-15% level is reached.

A number of moisture control systems are available. The automatic conductivity control system, patented by R. R. Street & Co. is an example. This system (17) uses the fact that conductance of a certain detergent at fixed concentration increases with increase of its micellar water content. In the NID** Fellowship Bulletin F-14 of June 1954 it has been shown that using this automatic conductivity control process the regain of rayon could be kept at between 14 and 15% in the more than 40 loads of silk and wool fabrics which were run, regardless of initial water regain, which was determined as 7, 10 and 14%. In principal a solenoid valve is energized to add more water to the system when the conductance of the detergent bath, which is measured by a cylindrical cell, drops below the preset control point. For practical purposes small variations in the concentration of detergent (±10%), temperature (70-90° F.), or impurities do not affect this automatic control system adversely. Because it is practical this process is used in over 6000 plants in the United States and has been copied in Germany (14) and Australia.

Another process for moisture control of the drycleaning system has been patented by Fulton and Alexander of NID (18). It makes use of the fact that water content of fabrics is in equilibrium with water vapor pressure in the air space above the solvent. When the relative humidity in this air space drops below the desired level, due to reduced water content of fabric and solution, the sensing element of an electric resistance type hygrometer will respond. It can be connected to activate a solenoid valve which will add water to the system.

(b) Equilibrium data

Next we investigated how the water in our system is distributed between fabrics and micellar solution. As pointed out above, anionic detergents in nonpolar medium can solubilize considerable

*Paper presented at annual meeting of ASTM Committee D-12 on Soaps and Other Detergents, New York, March 15.

**National Institute of Drycleaning, Silver Spring, Md.

amounts of water, and—on introduction of fabrics into such a system—an equilibrium will be established between the water content of the solution and the water in the fabric. Work with commercial detergent compositions by Fulton, et al. (8) established that a dynamic water exchange exists between detergent solution, fabric and air phase. Our laboratory (12) worked with micellar systems of pure "Aerosol OT" as well as commercial detergent mixtures and viscose rayon in hydrocarbon solvent to which varying amounts of water were added. We determined the equilibrium water contents of the three phases (micellar phase, air and fabric) at the different temperatures. In an enclosed system, air was pumped through a 2% detergent solution in hydrocarbon solvent to which rayon swatches had been added. After equilibrium had been established, the water vapor pressure was determined from temperature and relative humidity readings, the water content in solvent and fabric by Karl Fischer titration. A wealth of data was obtained in this manner.

Although similar results were obtained for the commercial detergent mixtures, only data for 2% "OT" will be given. Fig. 7 shows water vapor pressures for six different temperatures versus the micellar water content of the solvent. A similar set of curves is obtained for regain of water in rayon. Fig. 8 shows water regain of rayon versus micellar water content of the solution. The water regain of rayon is linearly dependent on the quantity of water which is solubilized above 5.5% regain and independent of the temperature within the range of 13-35°C. The positive intercept of the regain axis suggests that the first 5.5% water regain are more strongly bound than subsequently sorbed water. A similar phenomenon is shown by viscose rayon which is in equilibrium with atmospheric moisture.

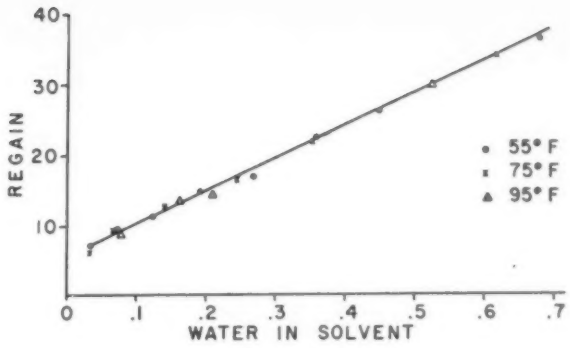


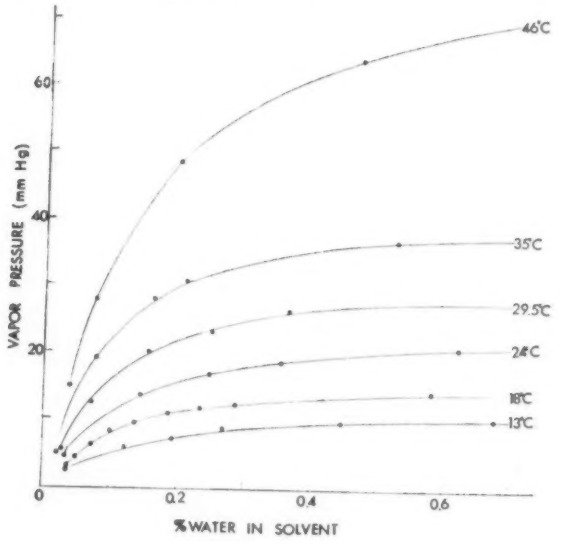
Figure 8. Percent water regain in viscose rayon versus percent water in solvent (wt./vol.) in 2% OT solutions (wt./vol.).

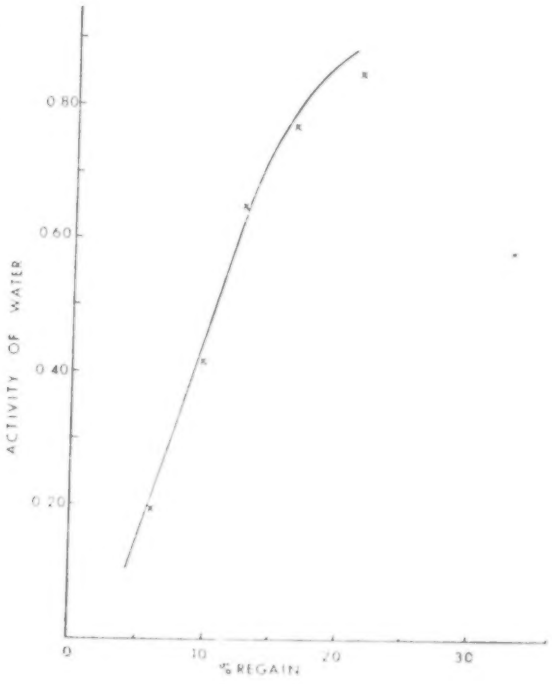
A comparison of the water regain of rayon in air, which is known (19) and that of rayon as determined in 2% "OT" solutions of varying water content versus corresponding water vapor pressures is shown in Fig. 9. At a temperature of 24° to 25°C. in the range of micelle formation the regain of rayon in solvent is practically identical to that in air. At extremely high relative humidities (over 80%), where the micellar range merges with that of emulsions, some discrepancies are noted. Although not shown in Fig. 9, the same results are obtained at 13°, 18°, 30° and 46°C.

Fulton, et al. concluded that

Figure 7 (bottom left). Water vapor pressure in mm. Hg versus % water content in 2% OT solutions (wt./vol.).

Figure 9 (right). Activity of water (determined as relative humidity in air) vs. % regain of viscose rayon in air (solid line) and in 2% OT solution at 24° C (X).





at equilibrium, fabric immersed in solvent containing solubilized water has the same water regain as fabric in the vapor phase. Our results confirm this conclusion with experiments carried out at 24°C. and at low relative humidities. However, above 80% relative humidity fabric immersed in solvent regains more water than fabric in air at the same relative humidity (Fig. 9). This difference becomes greater with increase of temperature to 46°C.

It should be pointed out that there is no thermodynamic requirement for equality of regain by fabric in the two phases. The regain of rayon immersed in the solvent at constant relative humidity of the air phase was found to be independent of temperature in the range of 13° to 46°C. Hess (14) reports similar results between 20° and 40°C. In contrast, regain of rayon in air at constant relative humidity is markedly decreased with increase in temperature (19).

Solubilization in aqueous systems reduces the vapor pressure of the solubilizate. Vapor pressure of water which is micellarly solubilized in a hydrocarbon solvent is likewise less than that of pure water at the same temperature. In Fig. 10 the logarithm of the vapor pressure is plotted versus the reciprocal of the absolute temperature for various micellar water contents. The top line A represents pure water. The solid lines below it represent 0.6%-0.05% of solubilized water in 2% "OT" solution. Similar pressure-temperature relationships exist for water in rayon at different regains.

The vapor pressure-temperature relations for micellar water as well as those for water in rayon are comparable to those for water in concentrated inorganic electrolyte solutions as shown in lines B, C, and D of Fig. 10, in which (B) represents 10 g NaCl, (C) 30 g NaCl and (D) 85 g NaCl O_3 in 100 g water.* Calculated heats of vaporization of water are close to that of pure water. Brady and Huff (20) who determined vapor pressures of solubilized benzene in aqueous detergent solutions used the relation which is shown in Table II, where p_2° is the vapor pressure of pure water, p_2 is the vapor pressure of micellar water, n_1 and n_2 are moles "OT" and moles water.

Table II. Constants of Equation $p_2/p_2^\circ = n_2k_{12}/n_2 + fn_1$

Temperature (°F)	55	65	75	85	95	115
k_{12}	1.09	1.09	1.09	1.11	1.08	1.08
f	1.20	1.20	1.25	1.38	1.30	1.81

Values of k_{12} for our system are close to ideal (Raoult's law requires $f = k_{12} = 1$) and are unlike those for the aqueous system which are between 1.7 and 2.0. The quantity f increases in general with temperature and is between 1.20 and 1.81. Brady and Huff have interpreted their values of f, which average at 0.75, as indicating that only ¾ of the detergent molecules are available for solubilization of benzene in the hydrocarbon portion of the molecule. Water in the core of the lipophilic micelle, however, may be thought of as forming a very concentrated solution with the electrolyte represented by the polar ends of the detergent molecule.

Each molecule of detergent contributes a maximum of two ions toward interaction with solubilized water. Values of f less than 2 may

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*Data used in plotting curves B, C, and D from Landolt-Boernstein Tabellen, 6th ed., p. 1383, Springer Verlag, Berlin, Germany, 1923-31.

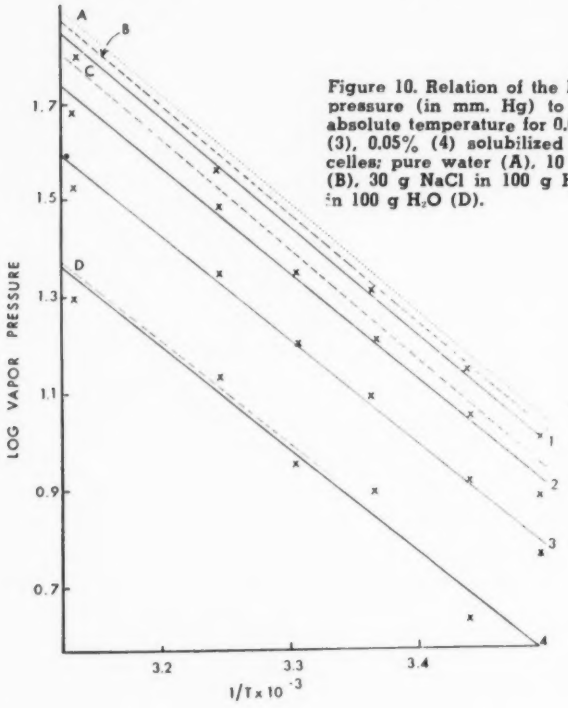
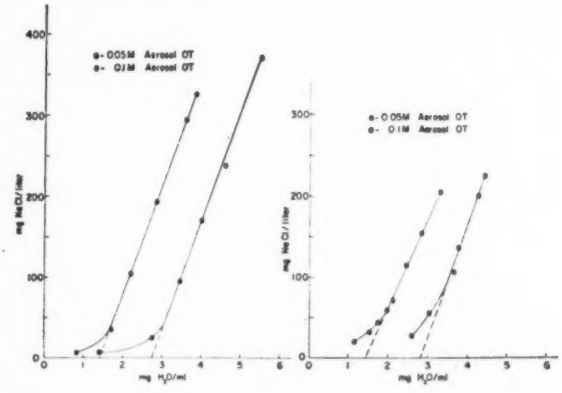


Figure 10. Relation of the log of the water vapor pressure (in mm. Hg) to the reciprocal of the absolute temperature for 0.6% (1), 0.2% (2), 0.1% (3), 0.05% (4) solubilized water in 2% OT micelles; pure water (A), 10 g NaCl in 100 g H_2O (B), 30 g NaCl in 100 g H_2O (C), 85 g $NaClO_3$ in 100 g H_2O (D).

Figure 11. Solubility of NaCl in perchlorethylene (left) and in n-dodecane (right).



CYANAMID

The diverse properties of Aerosol 22 give it wide use for soaps and detergents. A highly soluble, highly acid- and alkali-stable emulsifier with non-rewetting properties, Aerosol 22 makes an excellent additive for many cosmetics and household and industrial cleaners and polishes. Aerosol 22 has good dispersing qualities and ability to produce small particle-size emulsions – features that impart good spreading or covering properties to such diverse products as beauty creams, floor polishes and shoe polishes.

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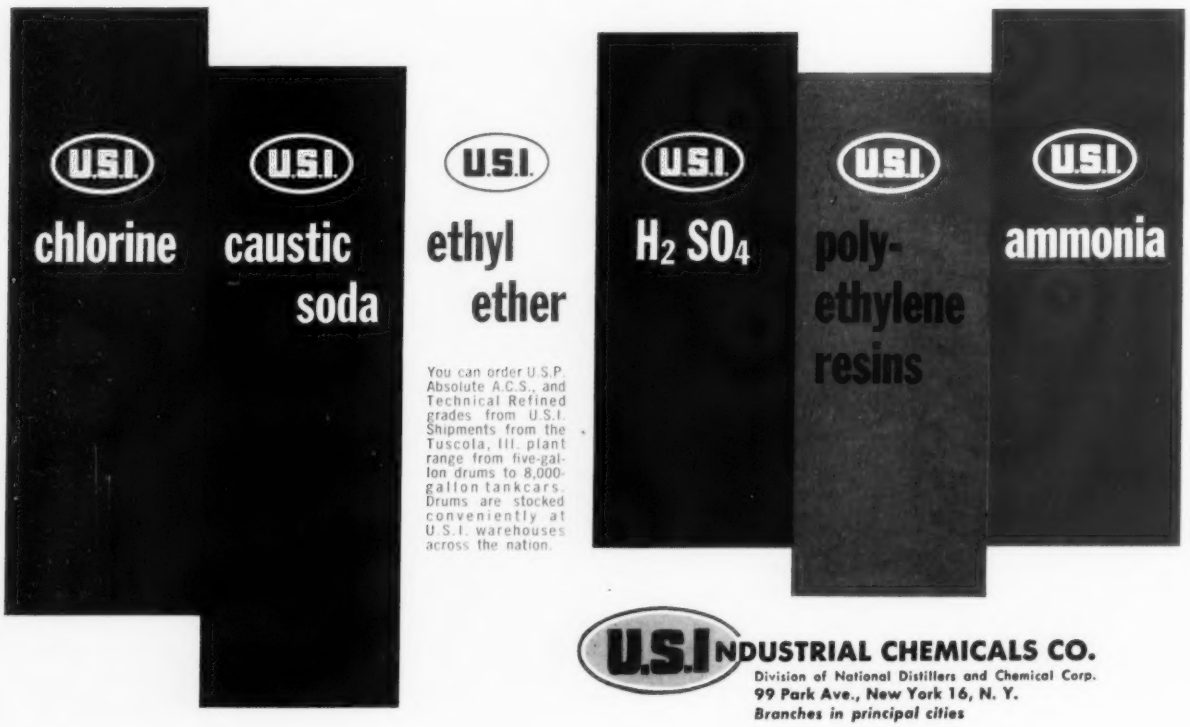

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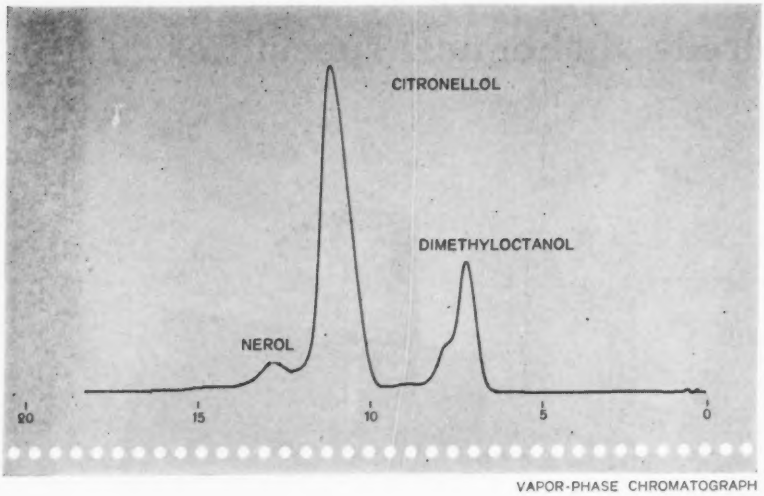

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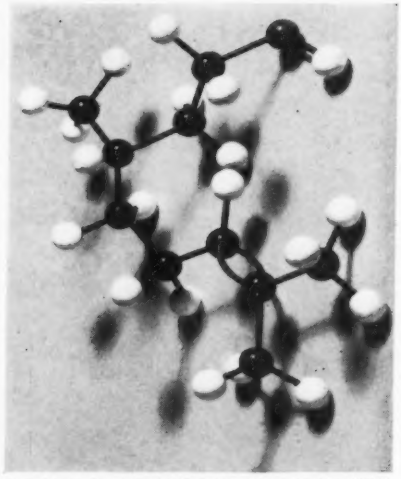

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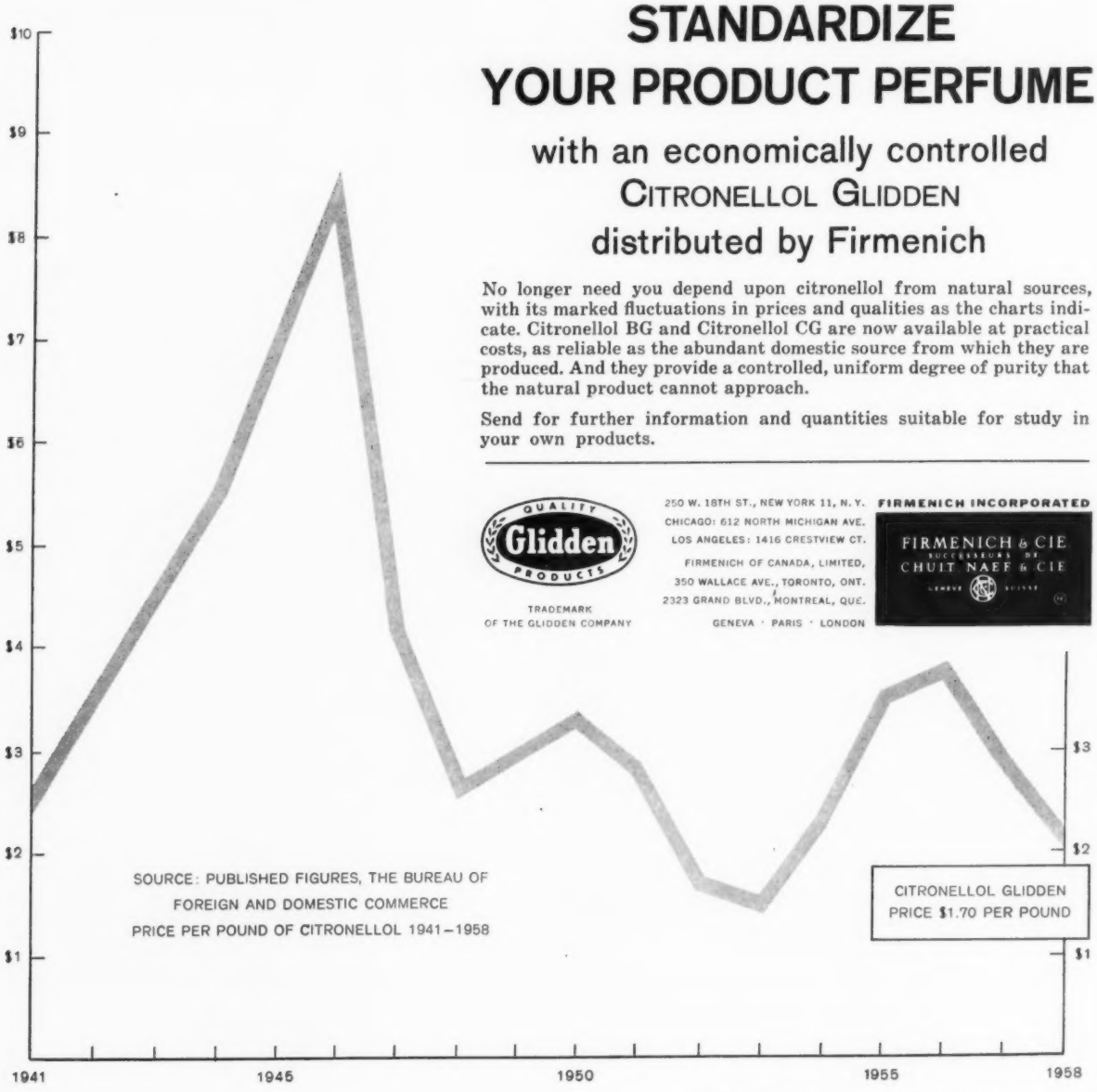

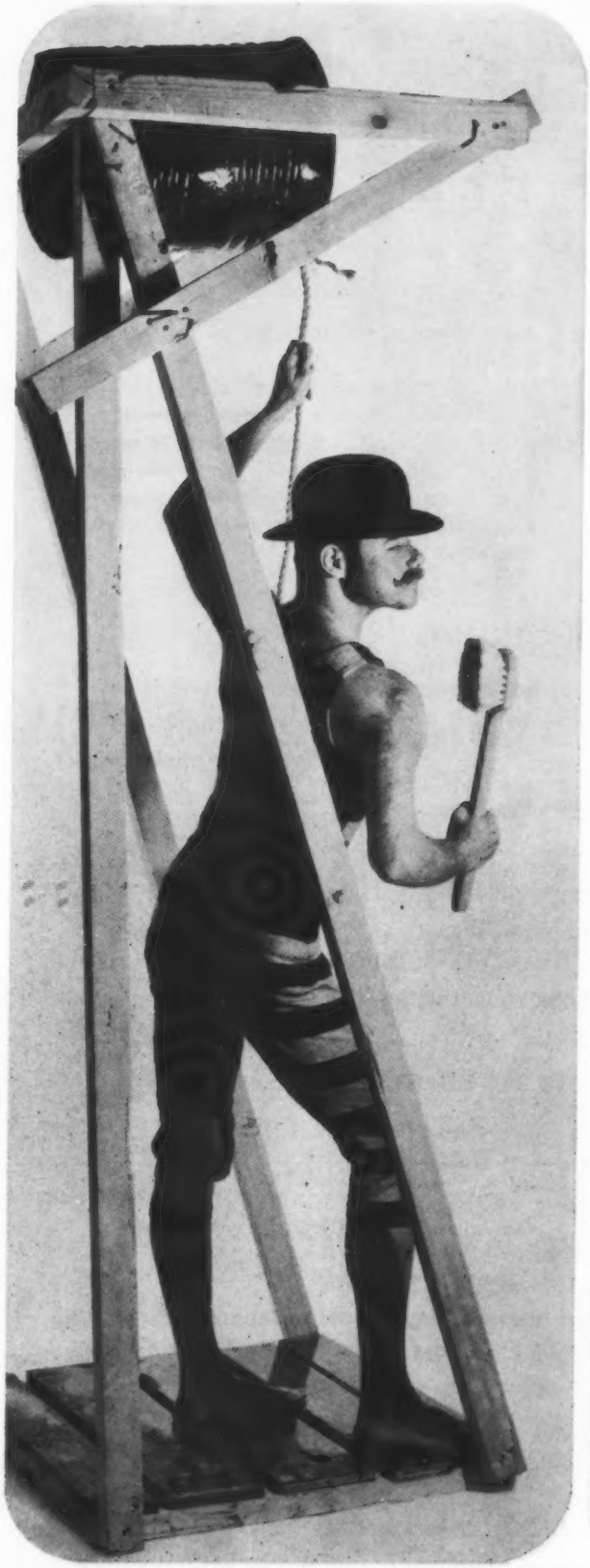

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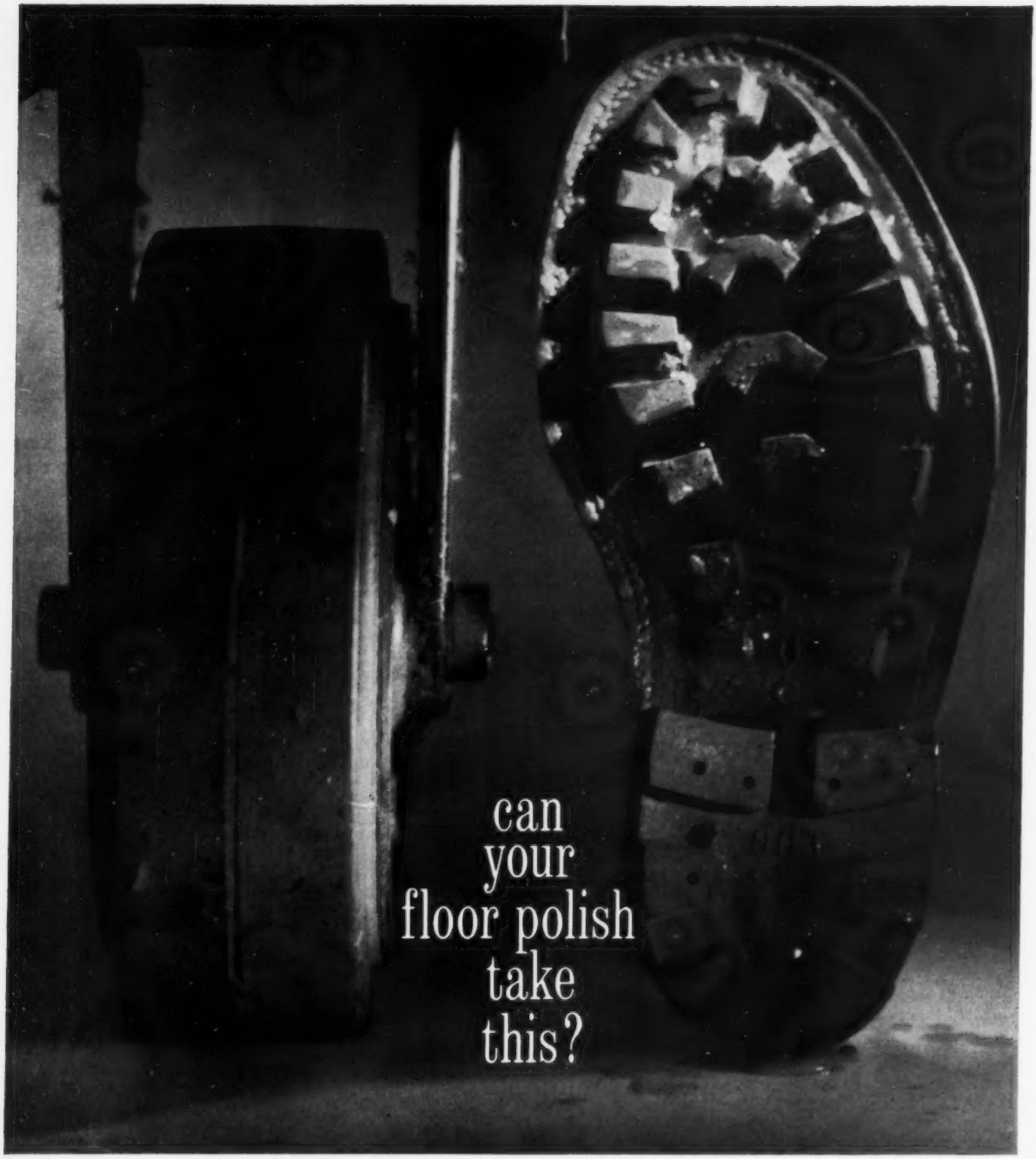

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Waxing Enhances Floors

CSMA sponsored study confirms that waxing enhances floor coverings and helps maintain their beauty. Floor waxes also are an aid in protecting and simplifying all maintenance.

By Walter J. Hackett and Cyril S. Kimball*,

Foster D. Snell, Inc.
New York

IT has been estimated that the annual sales of floor wax in this country amount to approximately 100 million dollars at retail prices. It follows that there must be an economic need for such products. Since a very substantial portion of all floor wax sold is used on resilient smooth surface floor coverings, the developments and trends in the floor covering industry are of great interest and significance to the floor wax industry. This study, sponsored by the Waxes and Floor Finishes Division of C.S.M.A., has as its objective the determination of whether new developments in the floor covering field have so altered the maintenance requirements as to make the use of floor wax unnecessary. Claims to this effect have been made by floor covering manufacturers, primarily in the promotion of some of the newer types of vinyl floor coverings.

The reasons for using floor wax are well known to the homemaker and the industrial and institutional maintenance man, but for completeness we will delineate them. First, for enhancement of beauty – to bring out high gloss and depth of colors. Second, for maintenance of beauty – to help preserve a clean and neat appearance. Third, for protection of the floor covering–to aid in the prevention of ingraining of dirt, staining, abrasive wear, and to eliminate the necessity of using harsh cleaning methods which cause increased wear. Fourth, to make cleaning of floors easier and less time consuming. These are the attributes the consumer expects to obtain when using a floor wax.

Floor Wax—Types Used

It is in order to clarify what is meant by the terms floor wax and waxing floors. We hear the terms floor polish, floor finish, floor treatment and floor coating applied generally to the same types of temporary floor coatings. Dr. J. V. Steinle of S. C. Johnson & Son, Inc. in a paper presented before the Waxes and Floor Finishes Division at the 46th annual C.S.M.A. meeting in Washington, D. C., last December stated, "Today the term floor wax merely means a product which is used in the maintenance of floors through deposition of a solid temporary coating on those floors." In view of the fact that the average consumer refers to it as floor wax, we will, for purposes of this study, designate all of the floor coatings employed as floor wax without regard to composition.

The origin of the term goes back to the 13th century when history records the first use of beeswax on marble and stone floors. Over the years, and particularly during the last thirty years, there have been many developments and some drastic changes in the production of these temporary floor coatings. The advent of water emulsion or bright drying floor wax in about 1929 initiated much applied scientific research which has changed the composition, but not the overall beneficial effects, of these coatings. Prior to this time, floor wax comprised a dispersion of hard and soft waxes in organic solvents in the form of "liquid wax" and "paste wax." Solvent base liquid and paste waxes are said to account for approximately one-fifth of total sales of floor waxes, with water base or bright drying waxes making up the remaining four-fifths.

There are three generally recognized types of water emulsion floor wax, namely, high wax content emulsions; high resin content emulsions; and emulsion polymer products. The broad objective of this study dictated that representative industry products be used and,

*Paper presented during 46th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 18, 1960.

therefore, samples of the following types of floor wax were purchased by us on the open market. The samples were coded as shown below:

Wax A – Non-buffable emulsion type
Wax B – Buffable emulsion type
Wax C – Solvent base liquid wax

Floor Coverings Used

In general, the layman is not familiar with various types, composition or process of manufacture of resilient smooth surface floor coverings. Indeed, he is more apt to classify these floor coverings by trade name rather than by composition or type. We will herein use the terminology employed in the floor covering industry. This industry, at a conference conducted by the Building Research Institute in Washington, D. C., in September 1958, described resilient smooth surface flooring as follows:

Asphalt Tile . . . Composed through full thickness of asphalt or resinous binder with asbestos or other fibers, fillers, and pigments formed under pressure while hot.

Vinyl-Asbestos Tile . . . Composed through full thickness of vinyl resins, plasticizers, pigments, fillers and asbestos fibers formed under pressure while hot.

Vinyl (Backed) Sheet and Tile . . . A wearing layer composed of vinyl resins, plasticizers, pigments and fillers overlaid on a backing of various regular or alkali resistant materials.

Vinyl (Homogenous) Tile . . . Composed through full thickness of vinyl resin, plasticizers, pigments and fillers formed under pressure while hot.

Rubber Sheet and Tile . . . Composed through full thickness of vulcanized rubber compound binder with reinforcing fibers, pigments and fillers.

Linoleum Sheet and Tile . . . Composed of oxidized linseed oil, fossil and other resins or other oxidized oleoresinous binder mixed with ground cork, wood flour, mineral fillers and pigments and pressed on burlap or saturated felt backing.

Cork Tile . . . Composed through full thickness of compressed granulated cork bonded with a heat processed resinous binder.

It was fundamental to the objective of this study to include all types of resilient smooth surface floor coverings. For purposes of simplification and because different categories of cork tile require different maintenance procedures, for example, one variety is pre-waxed in the factory, we have not included cork tile. It is believed that vinyl-cork tile would be comparable to the backed vinyl tile which we have included in our studies.

For use in this investigation, we purchased on the open market the floor covering materials shown below. In some cases where there was a price differential or a difference in construction for the same general type of floor covering, we purchased material made by two different manufacturers. Altogether, these represent products manufactured by seven different floor covering producers.

Asphalt tile 1—white background mottled with yellow and brown.
Asphalt tile 2—white background mottled with black.
Vinyl asbestos tile 3—solid white.
Vinyl asbestos tile 4—white background mottled with green.
Homogenous vinyl tile 5—solid white.
Homogenous vinyl tile 6—solid white.
Backed vinyl sheet 7—yellow background terrazzo style pattern.
Roto vinyl sheet 8—white with gold sparkles.
Roto vinyl sheet 9—grey and white background with red, yellow, blue and white diamond shaped figures.
Rubber tile 10—white background mottled with green.
Linoleum sheet 11—solid white—burlap backed.

Test Floor Maintenance

The floor coverings supplied as sheet goods were cut into 3′ x 3′ squares and cemented to 3′ x 3′ x 1/16″ aluminum panels. The other test surfaces were 9″ x 9″ x ⅛″ tiles. All floor coverings supplied as tile, with the exception of asphalt tile, were affixed to the aluminum panels with double faced pressure sensitive tape. In order to prevent excessive cracking or chipping as a result of the handling of, or extended traffic on the asphalt, these tiles were cemented to a rigid base—¼″ Masonite panels. The edges of each asphalt tile test panel were then bevelled down in order to eliminate sharp edges which would be prone to breakage by kicking. All test panels of tile were three feet square and contained 16 tiles.

All panels were cleaned with an ammoniacal soap solution to remove any mill finish of wax. After thorough drying of the panels, the three floor waxes, A, B and C, as previously described, were applied to the linoleum and the backed and homogenous vinyl test panels, using a two coat application at a rate of approximately 1,500 square feet to a gallon. Mohair applicators were employed for application of the emulsion waxes in order to distribute them uniformly. On the remaining types of floor coverings, namely asphalt tile, vinyl asbestos tile and rubber tile, only floor waxes A and B were used. The reason wax C, the solvent base wax, was not used on these is because the manufacturers caution against the deleterious effects which may result from the use of volatile organic solvents on these floor coverings.

Four or five test panels were prepared for each of the 11 different floor covering materials, depending upon whether the solvent base wax C was to be used. One panel of each floor covering was not waxed. This unwaxed panel was subjected to identical treatment, that is, exposure to traffic or floor service and periodic cleaning (and stripping), as the waxed panels. Floor waxes A, B and C were applied to two or three (as applicable) of the panels, and the one remaining panel was divided into quadrants. One quadrant was not waxed and each of the other quadrants were waxed with waxes A, B and C, where applicable. For those floor coverings where solvent base wax C was not permissible, two quadrants were not waxed and two were waxed with the emulsion type waxes A and B. The purpose of these quadrant panels was to compare more closely controlled traffic variables with the larger individual three foot square panels.

Where the buffable types of floor wax (B and C) were applied, panel surfaces were buffed by ma-

chine prior to installation in test floor area. Floor wax A was not buffed at any time during the test period.

The four or five panels (those which were waxed, the unwaxed panel and the divided panel) prepared with the same flooring material constitute a set. The sets of panels were installed in test areas on eight floors in our building. In order to equalize traffic, the individual panels were rotated through 90° and advanced one position along the test floor daily. Sweeping with a dust broom was also included in the daily maintenance. At weekly intervals the panels were damp mopped. After every two week cycle of traffic, the panels were scrubbed and stripped free of wax film, using an ammoniacal soap solution. It was recognized that the level of traffic varied somewhat from test area to test area and, therefore, the panels were placed in a different test area after recoating for each two week cycle of traffic. During the test, each set of panels was thus in each of the eight different test areas and never in the same location twice. A photoelectric counter, used to determine the number of transits per test area, revealed variations from an average low of 200 per day to a high of 500 per day. The average number of transits across all eight floors was 340 per day. Since the test panels were not only rotated within the test area, but also by test area itself, the number 340 may be considered to be the average number of transits each panel received per day throughout the test. In addition to foot traffic, a laboratory supply cart was drawn over the test areas two or three times a day. We would judge the 340 transits per day to be intermediate between moderate and severe traffic conditions. Gloss and reflectance readings were taken at the start of the test, after traffic exposure and before cleaning, after stripping the wax, and after rewaxing. The schedule of maintenance was continued for a period of 16 weeks total traffic exposure.

Table I. Initial gloss improvement prior to exposure to traffic

Floor Covering	Glossmeter Gloss Per mil 60° Waxed			No Wax
Floor wax:	A	B	C	
Asphalt tile 1	56	51	—	18
Asphalt tile 2	48	48	—	15
Vinyl asbestos tile 3	44	44	—	16
Vinyl asbestos tile 4	46	45	—	18
Homogenous vinyl tile 5	68	67	45	16
Homogenous vinyl tile 6	65	60	53	52
Backed vinyl sheet 7	51	48	45	25
Roto vinyl sheet 8	67	54	46	20
Roto vinyl sheet 9	63	51	49	26
Rubber tile 10	59	62	—	12
Linoleum sheet 11	25	23	18	6

Conditions

Floor coverings cleaned with solution of soap and ammonia.
Two coats of Wax A, B or C applied.
Wax B and C buffed after drying.
Gloss measurements made according to standard pattern along two axis in center of panels.

A total of 50 panels constituting 11 sets of treated and untreated floor coverings thus received equivalent and simultaneous exposure to traffic and equivalent maintenance. All data were obtained on the same 50 panels, beginning with the initial scrubbing and application of the floor waxes and ending with the final stripping and scrubbing of all panels.

Properties Studied

In order to provide comparative data covering the properties or performance characteristics expected of floor wax, we made measurements of gloss and reflectance (appearance), as follows:

I. Initial change in gloss on application of floor wax to the scrubbed floor covering panels before exposure to traffic or service. These data provide a basis of comparison with the same panels after exposure to equal traffic or service.

Initial reflectance of panels prior to waxing or exposure to traffic.

II. Maintenance of gloss during service. These measurements show the relative lustre, a factor in appearance, of the soiled panels after exposure to traffic but prior to scrubbing and stripping of the dirt and floor wax films.

III. Resistance to soiling or reflectance after traffic. This data shows the relative cleanliness or appearance of the panels after traffic exposure but prior to scrubbing and stripping.

IV. Gloss or appearance after scrubbing and removal of the floor wax film. These measurements show the effect of the use of floor wax on the gloss or lustre of the floor covering material alone; and indicate the degree of protection against surface scratching and dulling afforded by floor wax films.

V. Preservation of surface appearance or reflectance after scrubbing and stripping of floor wax film. These data show the relative resistance to ingraining of soil in the abraded floor covering surfaces with and without waxing.

VI. Enhancement of appearance of floor beauty after regular maintenance with and without waxing. Gloss measurements made after 16 weeks (8 cycles of 2 weeks) traffic exposure followed by stripping and rewaxing, show the condition or relative appearance of the floor covering surfaces as they would exist with or without the continued use of floor wax after a period of months of service. These data may be compared with the data under I. to show the relative change in gloss or lustre of the individual panels.

To summarize, we show the appearance of the floor covering panels at the start of this study, that is prior to traffic exposure; then again after exposure, to 2 week cycles of traffic, that is in a soiled condition; after thorough scrubbing and stripping of the wax coating, or cleaned; and finally, after cleaning and rewaxing or attempting to restore the floor covering to its original condition. In order to provide a better appreciation of the differences in appearance between waxed and unwaxed panels, a series of photographs are included as supplements to the tables showing the data.

(To be concluded)

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PRODUCTION and distribution of a diversified line of chemical specialties products was begun by Pennsalt Chemicals Corp., Philadelphia, at a new 34,000 square-foot plant just completed in Atlanta, Ga. The fourth modern blending, warehousing and distribution center designed and constructed by Pennsalt since 1955, the new plant will serve the Southeast with Pennsalt's full line of products for such major industries as laundry, dry cleaning, refrigeration, aerosol packaging, food, dairy and metal processing.

The new plant will also distribute the company's line of household products. Its facilities will include packaging and distribution facilities for the full line of "Isotron" aerosol propellants and refrigerants.

Pennsalt "B-K" cleaners and sanitizers for the food and dairy industries, which will be made and warehoused, have been widely used in the southeast for many years. The company's line of chemicals for swimming pools will serve the popular home pool markets.

Metal producers and fabricators in the Southeast will be served by a complete line of phosphatizing, cleaning and drawing lubricants as well as Pennsalt's metal processing machinery and technical service through this new location. Like all other industries which the plant will serve, commercial laundries and dry cleaning establishments in this region will get direct service on Pennsalt products.

Located on a ten-acre tract in College Park adjacent to the new expressway on the southern perimeter of Atlanta, the new plant is the most modern of seven Pennsalt chemical specialties division plants in the United States and Canada. Its modern layout includes both interior and exterior materials storage and manufacturing facilities. Exterior explosion-proof production equipment will make such products as "Delchem" cleaners and coatings for the aircraft industry. The production area of the interior features a large mezzanine equipped with the latest machinery for wet and dry blending and utilizes efficient gravity feeds for packaging. This feature, used successfully at other Pennsalt chemical specialties plants, makes possible single floor operation and closer contact between production, administration and shipping.

The plant is near every type of transportation for fast movement of goods and personnel. It is located on the Central of Georgia Railroad, is near the Atlanta Airport, and has access to the new expressway within a quarter mile. In addition, the new plant is located in a booming industrial park which includes customers for Pennsalt chemical specialties.

In addition to its strategic location for serving a variety of industries in the Southeast, the plant's administrative offices will include billing, accounting, and credit functions for fast customer service.

"The establishment of this new plant in Atlanta enables us to serve a steadily growing list of customers for our specialty chemicals in the Southeast," comments J. Stanley Hall, eastern regional manager of the chemical specialties division. "As a result of our experience at other plants of this type, we have incorporated the best features of our specialty chemicals operations and added some new ones. Wherever possible, refinements and improvements have been made for more efficient production and better customer service.

"Provision has been made for fast credit service as well as direct pick-up by customers. A great deal of attention has been paid to shipping and traffic. This plant has greater truck dock area than other similar plants. Like the three previous plants of this type, it was designed for expansion of production and shipping facilities when future demands warrant."

The second largest of Pennsalt chemical specialties plants constructed in the past five years, the Atlanta plant follows a layout for production and materials handling conceived by the company's central engineering department for the design and construction of the first of these plants at Delaware, O. The idea, which depends largely on the mezzanine feature and on the use of fork lift trucks for movement of materials on a single level, has since been adopted by a number of other industries.

Timothy McCarthy, Inc., of

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Combination of forklift for movement of raw materials and finished products, mezzanine for blending and manufacturing, and gravity feeds for packing are used in new Atlanta, Ga., chemical specialties plant of Pennsalt Chemicals Corp., Philadelphia. Large glass panels on mezzanine level provide bright work area.

Hazardous Substances Law

Full text of Federal Hazardous Substances Labeling Law signed by President Eisenhower on July 12. New law is effective immediately, but no penalties to be levied for six months.

THE long-awaited Federal Hazardous Substances Labeling Act became law on July 12, 1960, when President Eisenhower signed and approved as public law Senate Bill 1283. The law is effective immediately but no penalties for violation will be imposed until the expiration of the sixth month after the date of its enactment. The Secretary of Health, Education, and Welfare is authorized to extend the effective date up to a period of 18 months after the month of enactment upon a finding that conditions exist which necessitate an extension of the law.

The law requires precautionary labeling on any substance intended for household use which is within the definition of "hazardous substance" in Section 2 of the law. This definition is in terms of such items as "toxic", "corrosive", "irritant", "strong sensitizer", "flammable", etc.

It does not apply to economic poisons subject to the Federal Insecticide, Fungicide, and Rodenticide Act, nor to foods, drugs and cosmetics subject to the Food, Drug, and Cosmetic Act.

The Federal Caustic Poison Act will remain in effect on articles subject to the Federal Food, Drug, and Cosmetic Act, which are excluded by definition from the new Hazardous Substances Law.

The new law will be enforced by the Food and Drug Administration of the Department of Health, Education, and Welfare. The FDA has indicated that it will draw up regulations to assist in administering the law.

The Chemical Specialties Manufacturers Assn. has announced that its Precautionary Labeling Committee is preparing a labeling manual for CSMA members. The manual is designed to help member companies in complying with the requirements of the law.

Plans are tentatively under consideration for a general session program during the 47th annual meeting of CSMA in Hollywood Beach, Fla., next December to have a thorough explanation of the new law and its effects and status at that time.

The complete text of the new law follows:

S. 1283

To regulate the interstate distribution and sale of packages of hazardous substances intended or suitable for household use.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE

Section 1. This Act may be cited as the "Federal Hazardous Substances Labeling Act."

DEFINITIONS

Sec. 2. For the purposes of this Act —

(a) The term "territory" means any territory or possession of the United States, including the District of Columbia and the Commonwealth of Puerto Rico but excluding the Canal Zone.

(b) The term "interstate commerce" means (1) commerce between any State or territory and any place outside thereof, and (2) commerce within the District of Columbia or within any territory not organized with a legislative body.

(c) The term "Department" means the Department of Health, Education, and Welfare.

(d) The term "Secretary" means the Secretary of Health, Education, and Welfare.

(e) The term "person" includes an individual, partnership, corporation, and association.

(f) The term "hazardous substance" means:

1. (A) Any substance or mixture of substances which (i) is toxic, (ii) is corrosive, (iii) is an irritant, (iv) is a strong sensitizer, (v) is flammable, or (vi) generates pressure through decomposition, heat, or other means, if such substance or mixture of substances may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children.

(B) Any substances which the Secretary by regulation finds, pursuant to the provisions of section 3(a), meet the requirements of subparagraph 1(A) of this paragraph.

(C) Any radioactive substance, if, with respect to such substance as used in a particular class of article or as packaged, the Secretary determines by regulation that the substance is sufficiently hazardous to require labeling in accordance with this Act in order to protect the public health.

2. The term "hazardous substance" shall not apply to economic poisons subject to the Federal Insecticide, Fungicide, and Rodenticide Act, nor to foods, drugs and cosmetics subject to the Federal Food, Drug, and Cosmetic Act, nor to substances intended for use as fuels when stored in containers and used in the heating, cooking, or refrigeration system of a house.

3. The term "hazardous substance" shall not include any source material, special nuclear material, or byproduct material as defined in the Atomic Energy Act of 1954, as amended, and regulations issued pursuant thereto by the Atomic Energy Commission.

(g) The term "toxic" shall apply

to any substance (other than a radioactive substance) which has the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface.

(h) (1) The term "highly toxic" means any substance which falls within any of the following categories: (a) Produces death within fourteen days in half or more than half of a group of ten or more laboratory white rats each weighing between two hundred and three hundred grams, at a single dose of fifty milligrams or less per kilogram of body weight, when orally administered; or (b) Produces death within fourteen days in half or more than half of a group of ten or more laboratory white rats each weighing between two hundred and three hundred grams, when inhaled continuously for a period of one hour or less at an atmospheric concentration of two hundred parts per million by volume or less of gas or vapor or two milligrams per liter by volume or less of mist or dust, provided such concentration is likely to be encountered by man when the substance is used in any reasonably foreseeable manner; or (c) produces death within fourteen days in half or more than half of a group of ten or more rabbits tested in a dosage of two hundred milligrams or less per kilogram of body weight, when administered by continuous contact with the bare skin for twenty-four hours or less.

(2) If the Secretary finds that available data on human experience with any substance indicate results different from those obtained on animals in the above-named dosages or concentrations, the human data shall take precedence.

(i) The term "corrosive" means any substance which in contact with living tissue will cause destruction of tissue by chemical action; but shall not refer to action on inanimate surfaces.

(j) The term "irritant" means any substance not corrosive within the meaning of subparagraph (i) which on immediate, prolonged, or repeated contact with normal living tissue will induce a local inflammatory reaction.

(k) The term "strong sensitizer" means a substance which will cause on normal living tissue through an allergic or photodynamic process a hypersensitivity which becomes evident on reapplication of the same substance and which is designated as such by the Secretary. Before designating any substance as a strong sensitizer, the Secretary, upon consideration of the frequency of occurrence and severity of the reaction, shall find that the substance has a significant potential for causing hypersensitivity.

(l) The term "extremely flammable" shall apply to any substance which has a flash point at or below twenty degrees Fahrenheit as determined by the Tagliabue Open Cup Tester, and the term "flammable" shall apply to any substance which has a flash point of above twenty degrees to and including eighty degrees Fahrenheit, as determined by the Tagliabue Open Cup Tester; except that the flammability of solids and of the contents of self-pressurized containers shall be determined by methods found by the Secretary to be generally applicable to such materials or containers, respectively, and established by regulations issued by him, which regulations shall also define the terms "flammable" and "extremely flammable" in accord with such methods.

(m) The term "radioactive substance" means a substance which emits ionizing radiation.

(n) The term "label" means a display of written, printed, or graphic matter upon the immediate container of any substance; and a requirement made by or under authority of this Act that any word, statement, or other information appear on the label shall not be considered to be complied with unless such word, statement, or other information also appears (1) on the outside container or wraper, if any there be, unless it is easily legible through the outside container or wrapper and (2) on all accompanying literature where there are directions for use, written or otherwise.

(o) The term "immediate container" does not include package liners.

(p) The term "misbranded package" or "misbranded package of a hazardous substance" means a hazardous substance in a container intended or suitable for household use which, except as otherwise provided by or pursuant to section 3, fails to bear a label —

(1) which states conspicuously (A) the name and place of business of the manufacturer, packer, distributor or seller; (B) the common or usual name or the chemical name (if there be no common or usual name) of the hazardous substance or of each component which contributes substantially to its hazard, unless the Secretary by regulation permits or requires the use of a recognized generic name; (C) the signal word "DANGER" on substances which are extremely flammable, corrosive, or highly toxic; (D) the signal word "WARNING" or "CAUTION" on all other hazardous substances; (E) an affirmative statement of the principal hazard or hazards, such as "Flammable," "Vapor Harmful," "Causes Burns," "Absorbed Through Skin," or similar wording descriptive of the hazard; (F) precautionary measures describing the action to be followed or avoided, except when modified by regulation of the Secretary pursuant to section 3; (G) instruction, when necessary or appropriate, for first-aid treatment; (H) the word "poison" for any hazardous substance which is defined as "highly toxic" by subsection (h); (I) instructions for handling and storage of packages which require special care in handling or storage; and (J) the statement "Keep out of the reach of children," or its practical equivalent, and

(2) on which any statements required under subparagraph (1) of this paragraph are located prominently and are in the English language in conspicuous and legible type in contrast by typography, layout, or color with other printed matter on the label.

REGULATIONS DECLARING HAZARDOUS SUBSTANCES AND ESTABLISHING VARIATIONS AND EXEMPTIONS

Sec. 3. (a) 1. Whenever in the judgment of the Secretary such action will promote the objectives of this Act by avoiding or resolving uncertainty as to its application, the Secretary may by regulation declare to be a hazardous substance, for the purposes of this Act, any substance or mixture of substances which he finds meets the requirements of subparagraph (1) (A) of section 2(f).

2. Proceedings for the issuance, amendment, or repeal of regulations under this subsection and the admissibility of the record of such proceedings in other proceedings, shall in all respects be governed by the provisions of section 701 (e), (f), and (g) of the Federal Food, Drug, and Cosmetic Act, except that —

(A) the Secretary's order after public hearing (acting upon objections filed to an order made prior to hearing) shall be subject to the requirements of section 409 (f) (2) of the Federal Food, Drug, and Cosmetic Act; and

(B) the scope of judicial review of such order shall be in accordance with the fourth sentence of paragraph (2), and with the provisions of paragraph (3), of section 409 (g) of the Federal Food, Drug, and Cosmetic Act.

(b) If the Secretary finds that the requirements of section 2(p) (1) are not adequate for the protection of the public health and safety in view of the special hazard presented by any particular hazardous substance, he may by regulation establish such reasonable variations or additional label requirements as he finds necessary for the protection of the public health and safety; and any container of such hazardous substance, intended or suitable for household use, which fails to bear a label in accordance with such regulations shall be deemed to be a misbranded package of a hazardous substance.

(c) If the Secretary finds that, because of the size of the package involved or because of the minor hazard presented by the substance contained therein, or for other good and sufficient reasons, full compliance with the labeling requirements otherwise applicable under this Act is impracticable or is not necessary for the adequate protection of the public health and safety, the Secretary shall promulgate regulations exempting such substance from these requirements to the extent he determines to be consistent with adequate protection of the public health and safety.

(d) The Secretary may exempt from the requirements established by or pursuant to this Act any container of a hazardous substance with respect to which he finds that adequate requirements satisfying the purposes of this Act have been established by or pursuant to any other Act of Congress.

PROHIBITED ACTS

Sec. 4. The following acts and

the causing thereof are hereby prohibited:

(a) The introduction or delivery for introduction into interstate commerce of any misbranded package of a hazardous substance.

(b) The alteration, mutilation destruction, obliteration, or removal of the whole or any part of the label of, or the doing of any other act with respect to, a hazardous substance, if such act is done while the substance is in interstate commerce, or while the substance is held for sale (whether or not the first sale) after shipment in interstate commerce, and results in the hazardous substance being in a misbranded package.

(c) The receipt in interstate commerce of any misbranded package of a hazardous substance and the delivery or proffered delivery thereof for pay or otherwise.

(d) The giving of a guarantee or undertaking referred to in section 5 (b) (2) which guarantee or undertaking is false, except by a person who relied upon a guarantee or undertaking to the same effect signed by, and containing the name and address of, the person residing in the United States from whom he received in good faith the hazardous substance.

(e) The failure to permit entry or inspection as authorized by section 11 (b) or to permit access to and copying of any record as authorized by section 12.

(f) The introduction or delivery for introduction into interstate commerce, or the receipt in interstate commerce and subsequent delivery or proffered delivery for pay or otherwise, of a hazardous substance in a reused food, drug, or cosmetic container or in a container which, though not a reused container, is identifiable as a food, drug, or cosmetic container by its labeling or by other identification. The reuse of a food, drug, or cosmetic container as a container for a hazardous substance shall be deemed to be an act which results in the hazardous substance being in a misbranded package. As used in this paragraph, the terms "food," "drug," and "cosmetic" shall have the same meanings as is the Federal Food, Drug, and Cosmetic Act.

(g) The manufacture of a misbranded package of a hazardous substance within the District of Columbia or within any territory not organized with a legislative body.

(h) The use by any person to his own advantage, or revealing other than to the Secretary or officers or employees of the Department, or to the courts when relevant in any judicial proceeding under this Act, of any information acquired under authority of section 11 concerning any method of process which as a trade secret is entitled to protection.

PENALTIES

Sec. 5. (a) Any person who violates any of the provisions of section 4 shall be guilty of a misdemeanor and shall on conviction thereof be subject to a fine of not more than $500 or to imprisonment for not more than ninety days, or both; but for offenses committed with intent to defraud or mislead, or for second and subsequent offenses, the penalty shall be imprisonment for not more than one year, or a fine of not more than $3,000, or both such imprisonment and fine.

(b) No person shall be subject to the penalties of subsection (a) of this section, (1) for having violated section 4(c), if the receipt, delivery, or proffered delivery of the hazardous substance was made in good faith, unless he refuses to furnish on request of an officer or employee duly designated by the Secretary, the name and address of the person from whom he purchased or received such hazardous substance, and copies of all documents, if any there be, pertaining to the delivery of the hazardous substance to him; or (2) for having violated section 4(a), if he establishes a guarantee or undertaking signed by, and containing the name and address of, the person residing in the United States from whom he received in good faith the hazardous substance, to the effect that the hazardous substance is not in misbranded packages within the meaning of that term in this Act; or (3) for having violated subsection (a) or (c) of section 4 in respect of any hazardous substance shipped or delivered for shipment for export to any foreign country, in a package marked for export on the outside of the shipping container and labeled in accordance with the specifications of the foreign purchaser and in accordance with the laws of the foreign country, but if such hazardous substance is sold or offered for sale in domestic commerce, this clause shall not apply.

SEIZURES

Sec. 6. (a) Any hazardous substance that is in a misbranded package when introduced into or while in interstate commerce or while held for sale (whether or not the first sale) after shipment in interstate commerce, or which may not, under the provisions of section 4(f), be introduced into interstate commerce, or which has been manufactured in violation of section 4(g), shall be liable to be proceeded against while in interstate commerce or at any time thereafter, on libel of information and condemned in any district court in the United States within the jurisdiction of which the hazardous substance is found: Provided, That this section shall not apply to a hazardous substance intended for export to any foreign country if it (1) is in a package branded in accordance with the specifications of the foreign purchaser, (2) is labeled in accordance with the laws of the foreign country, and (3) is labeled on the outside of the shipping package to show that it is intended for export, and (4) is so exported.

(b) Such hazardous substance shall be liable to seizure by process pursuant to the libel, and the procedure in cases under this section shall conform, as nearly as may be, to the procedure in admiralty; except that on demand of either party any issue of fact joined in any such case shall be tried by jury. When libel for condemnation proceedings under this section, involving the same claimant and the same issues of misbranding, are pending in two or more jurisdictions, such pending proceedings, upon application of the United States or the claimant seasonably made to the court of one such jurisdiction, shall be consolidated for trial by order of such court, and tried in (1) any district selected by the applicant where one of such proceedings is pending; or (2) a district agreed upon by stipulation between the parties. If no order for consolidation is so made within a reasonable time, the United States or the claimant may apply to the court of one such jurisdiction, and such court (after giving the other party, the claimant, or the United States attorney for such district, reasonable notice and opportunity to be heard) shall by order, unless good cause to the contrary is shown, specify a district of reasonable proximity to the claimant's principal place of business, in which all such pending proceedings shall be consolidated for trial and tried. Such order of consolidation shall not apply so as to require the removal of any case the date for trial of which has been fixed. The court granting such order shall give prompt notification thereof to the other courts having jurisdiction of the cases covered thereby.

(c) Any hazardous substance condemned under this section shall, after entry of the decree, be disposed of by destruction or sale as the court may, in accordance with the provisions of this section, direct and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the Treasury of the United States; but such hazardous substance shall not be sold under such decree contrary to the provisions of this Act or the laws of the jurisdiction in which sold: Provided, That, after entry of the decree and upon the payment of the costs of such proceedings and the execution of a good and sufficient bond conditioned that such hazardous substance shall not be sold or disposed of contrary to the provisions of this Act or the laws of any State or territory in which sold, the court may by order direct that such hazardous substance be delivered to the owner thereof to be destroyed or brought into compliance with the provisions of this Act under the supervision of an officer or employee duly designated by the Secretary, and the expenses of such supervision shall be paid by the person obtaining release of the hazardous substance under bond.

(d) When a decree of condemnation is entered against the hazardous substance, court costs and fees, and storage and other proper expenses, shall be awarded against the person, if any, intervening as claimant of the hazardous substance.

(e) In the case of removal for trial of any case as provided by subsection (b) —

(1) the clerk of the court from which removal is made shall promptly

transmit to the court in which the case is to be tried all records in the case necessary in order that such court may exercise jurisdiction;

(2) the court to which such case is removed shall have the powers and be subject to the duties, for purposes of such case, which the court from which removal was made would have had, or to which such court would have been subject, if such case had not been removed.

HEARING BEFORE REPORT OF CRIMINAL VIOLATION

Sec. 7. Before any violation of this Act is reported by the Secretary to any United States attorney for institution of a criminal proceeding, the person against whom such proceeding is contemplated shall be given appropriate notice and an opportunity to present his views, either orally or in writing, with regard to such contemplated proceeding.

INJUNCTIONS

Sec. 8. (a) The United States district courts and the United States courts of the territories shall have jurisdiction, for cause shown and subject to the provisions of rule 65 (a) and (b) of the Federal Rules of Civil Procedure, to restrain violations of this Act.

(b) In any proceeding for criminal contempt for violation of an injunction or restraining order issued under this section, which violation also constitutes a violation of this Act, trial shall be by the court or, upon demand of the accused, by a jury. Such trial shall be conducted in accordance with the practice and procedure applicable in the case of proceedings subject to the provisions of rule 42 (b) of the Federal Rules of Criminal Procedure.

STYLE OF ENFORCEMENT PROCEEDINGS — SUBPENAS

Sec. 9. All criminal proceedings and all libel or injunction proceedings for the enforcement, or to restrain violations, of this Act shall be by and in the name of the United States. Subpenas for witnesses who are required to attend a court of the United States in any district may run into any other district in any such proceedings.

REGULATIONS

Sec. 10. (a) The authority to promulgate regulations for the efficient enforcement of this Act, except as otherwise provided in this section, is hereby vested in the Secretary.

(b) The Secretary of the Treasury and the Secretary of Health, Education, and Welfare shall jointly prescribe regulations for the efficient enforcement of the provisions of section 14, except as otherwise provided therein. Such regulations shall be promulgated in such manner and take effect at such time, after due notice, as the Secretary of Health, Education, and Welfare shall determine.

EXAMINATIONS AND INVESTIGATIONS

Sec. 11. (a) The Secretary is authorized to conduct examinations, inspections, and investigations for the purposes of this Act through officers and employees of the Department or through any health officer or employee of any State, territory, or political subdivision thereof, duly commissioned by the Secretary as an officer of the Department.

(b) For purposes of enforcement of this Act, officers or employees duly designated by the Secretary, upon presenting appropriate credentials and a written notice to the owner, operator, or agent in charge, are authorized (1) to enter, at reasonable times, any factory, warehouse, or establishment in which hazardous substances are manufactured, processed, packed, or held for introduction into interstate commerce or are held after such introduction, or to enter any vehicle being used to transport or hold such hazardous substances in interstate commerce; (2) to inspect, at reasonable times and within reasonable limits and in a reasonable manner, such factory, warehouse, establishment, or vehicle, and all pertinent equipment, finished and unfinished materials, and labeling therein; and (3) to obtain samples of such materials or packages thereof, or of such labeling. A separate notice shall be given for each such inspection, but a notice shall not be required for each entry made during the period covered by the inspection. Each such inspection shall be commenced and completed with reasonable promptness.

(c) If the officer or employee obtains any sample, prior to leaving the premises, he shall give to the owner, operator, or agent in charge a receipt describing the samples obtained. If an analysis is made of such sample, a copy of the results of such analysis shall be furnished promptly to the owner, operator, or agent in charge.

RECORDS OF INTERSTATE SHIPMENT

Sec. 12. For the purpose of enforcing the provisions of this Act, carriers engaged in interstate commerce, and persons receiving hazardous substances in interstate commerce or holding such hazardous substances so received shall, upon the request of an officer or employee duly designated by the Secretary, permit such officer or employee, at reasonable times, to have access to and to copy all records showing the movement in interstate commerce of any such hazardous substance, or the holding thereof during or after such movement, and the quantity, shipper, and consignee thereof; and it shall be unlawful for any such carrier or person to fail to permit such access to and copying of any record so requested when such request is accompanied by a statement in writing specifying the nature or kind of such hazardous substance to which such request relates: Provided, That evidence obtained under this section shall not be used in a criminal prosecution of the person from whom obtained: Provided further, That carriers shall not be subject to the other provisions of this Act by reason of their receipt, carriage, holding, or delivery of hazardous substances in the usual course of business as carriers.

PUBLICITY

Sec. 13. (a) The Secretary may cause to be published from time to time reports summarizing any judgments, decrees, or court orders which have been rendered under this Act, including the nature of the charge and the disposition thereof.

(b) The Secretary may also cause to be disseminated information regarding hazardous substances in situations involving, in the opinion of the Secretary, imminent danger to health. Nothing in this section shall be construed to prohibit the Secretary from collecting, reporting, and illustrating the results of the investigations of the Department.

IMPORTS

Sec. 14. (a) The Secretary of the Treasury shall deliver to the Secretary of Health, Education, and Welfare, upon his request, samples of hazardous substances which are being imported or offered for import into the United States, giving notice thereof to the owner or consignee, who may appear before the Secretary of Health, Education, and Welfare and have the right to introduce testimony. If it appears from the examination of such samples or otherwise that such hazardous substance is in misbranded packages or in violation of section 4(f), then such hazardous substance shall be refused admission, except as provided in subsection (b) of this section. The Secretary of the Treasury shall cause the destruction of any such hazardous substance refused admission unless such hazardous substance is exported, under regulations prescribed by the Secretary of the Treasury, within ninety days of the date of notice of such refusal or within such additional time as may be permitted pursuant to such regulations.

(b) Pending decision as to the admission of a hazardous substance being imported or offered for import, the Secretary of the Treasury may authorize delivery of such hazardous substance to the owner or consignee upon the execution by him of a good and sufficient bond providing for the payment of such liquidated damages in the event of default as may be required pursuant to regulations of the Secretary of the Treasury. If it appears to the Secretary of Health, Education, and Welfare that the hazardous substance can, by relabeling or other action, be brought into compliance with this Act, final determination as to admission of such hazardous substance may be deferred and, upon filing of timely written application by the owner or consignee and the execution by him of a bond as provided in the preceding provisions of this subsection, the Secretary may, in accordance with regulations, authorize the applicant to perform such relabeling or other

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Eastman now offers polish formulators 7 basic types of polyethylene

New Epolene resins enable you to formulate broader range of liquid and paste polishes

The wide range of physical properties now available in Eastman's Epolene series of low-molecular-weight polyethylene resins provides formulating flexibility never before possible. For with the addition of three new resins (Epolene LVE, HDE and HD), polish makers can choose now from among seven different types to improve existing formulations or to develop new products.

Epolene resins produce self-polishing floor polishes that exhibit high gloss, anti-slip, water-spotting resistance and rebuffability. Emulsions of up to 40% solids can be prepared. Properly formulated, polishes made from Epolene are low in color and do not darken or turn yellow. Neither do they build up color with repeated applications.

Choose from either emulsifiable or non-emulsifiable types to obtain the right formulating characteristics and performance properties for your equipment and service.

Epolene E *emulsifiable* • Epolene E produces water-emulsion floor polishes that exhibit an excellent balance of high gloss, hardness, durability and good resistance to water-spotting, scuff and dirt pick-up. Ideally suited for heavy traffic, polishes made from Epolene E exhibit extreme toughness due to its higher molecular weight.

Epolene LVE *emulsifiable* • Lower in melt viscosity than the other emulsifiable Epolene resins, Epolene LVE has somewhat better handling characteristics and is the easiest to emulsify. It is softer than other resins in the series, too, and therefore may be expected to contribute better anti-slip properties and rebuffability to floor polishes made from it.

Epolene HDE *emulsifiable* • The first high-density emulsifiable polyethylene available, Epolene HDE is much harder than other resins in the series, yet quite easy to handle. A film of unmodified Epolene HDE emulsion is almost as hard as a film from a finished floor-wax formulation (rebuffable type). This increased hardness is due not only to the nature of this high-density polyethylene, but also to the fact that it is more compatible with oleic acid than are other emulsifiable polyethylenes. Epolene HDE restores rebuffability to polymer-containing polish formulations without sacrificing hardness.

Epolene N *non-emulsifiable* • Epolene N can improve significantly the properties of paraffin, microcrystalline or other waxes and is easily blended with these materials. It can replace part or all of the hard waxes in solvent paste polishes, for example, automotive polishes. Such polishes are characterized by low color, excellent hardness and gloss, and remarkable durability.

Epolene LV *non-emulsifiable* • Epolene LV and Epolene N are useful in similar applications. The LV type is softer than Epolene N, however, and because of its lower melt viscosity is somewhat easier to handle.

Epolene HD *non-emulsifiable* • An extremely hard material, Epolene HD is nevertheless easy to handle because of its low melt viscosity. It has a high softening point, and may be blended with waxes to increase their melting points. Epolene HD has a higher density than the other non-emulsifiable polyethylenes in the series.

Epolene C *non-emulsifiable* • Higher in molecular weight (7000) but lowest in density (0.907) of all the Epolene resins, Epolene C may be used in modifying waxes to increase melting points or to improve toughness and gloss.

Type	Molecular Weight	Brookfield Viscosity (cps. @ 120°C.)	Density	Penetration Hardness (100g./5sec./ 77°F., 10ths of mm.)
Epolene E	2500	1500	0.938	2
Epolene HDE	1500	455	0.956	1
Epolene LVE	1500	400	0.939	5
Epolene N	2500	2500	0.928	1
Epolene HD	1500	340	0.938	0.5
Epolene LV	1500	360	0.925	3
Epolene C	7000	16,000	0.907	7

If you are using low-molecular-weight polyethylenes in your polishes, investigate the complete Epolene series. Your Eastman representative will gladly explain the advantages of each of the resins in the series and will show you how to realize the most profitable use of them in your formulations. Ask him for specific formulating assistance and about the new time-saving, cost-cutting emulsifying technique developed at our laboratories.

Epolene®

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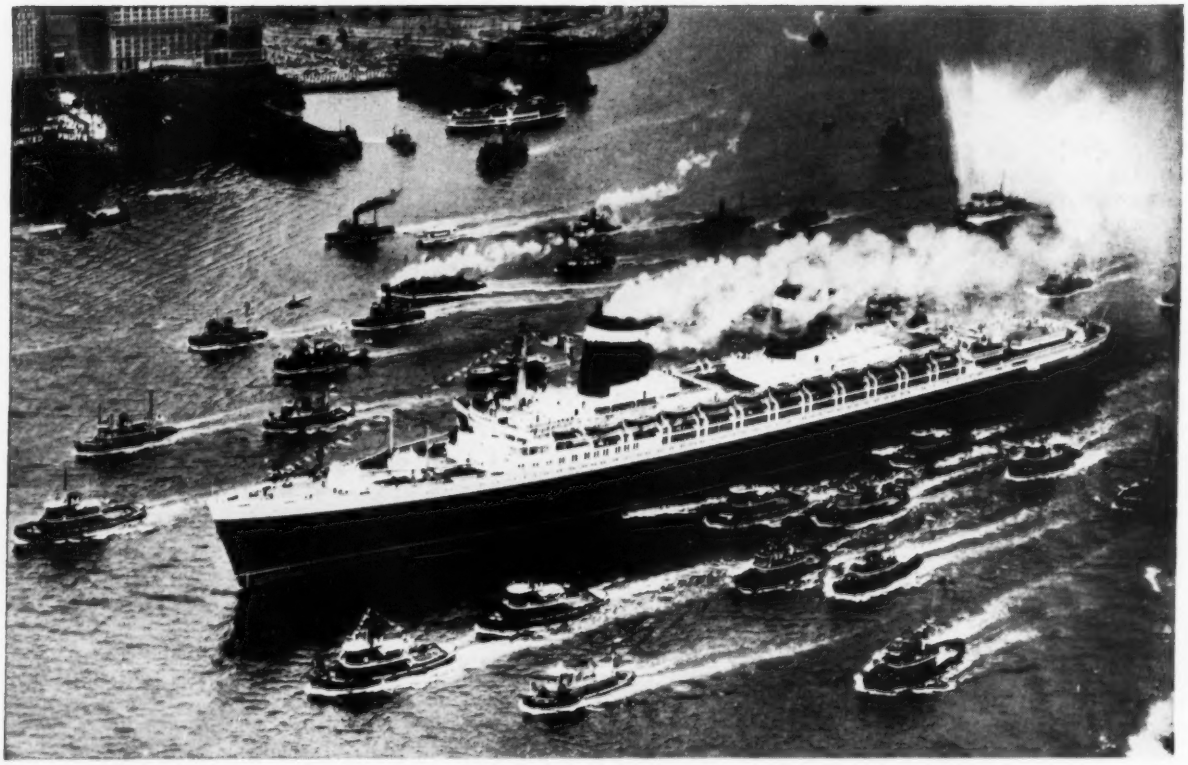

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MAGIC MARKET OF AEROSOL POWDERS

By E. E. Husted*,
Union Carbide Chemicals Co., Division Union Carbide Corp., New York

WE'RE going to conjure up the picture of a vast, untapped market for aerosol products . . . a market with huge potential, just begging to be supplied. And this trick will be easy, because it's no trick at all. The market is there . . . it exists . . . it's practically untapped . . . the rest is up to you. This is the magical market for aerosol powders.

As we all know, aerosols in general got their start about 15 or 16 years ago, and have since blossomed into sales of half a billion units annually. Today, a host of products spray themselves into our lives from the good old push-button container.

We have shoe polish, room deodorizer, shaving cream, furniture wax, paints . . . ah yes . . . paints. You're all familiar with the many colored enamels currently available in aerosol form . . . Then there's hair spray, adhesive, artist's fixative, window cleaner, lubricants, insecticides . . . and so on.

The list of products in aerosol form is a long and impressive one, indeed. Yet virtually nowhere in this list do we find powdered products. In fact, there are so few that it hasn't even been necessary to establish a powders category in the annual aerosol product survey! Just what does this mean to the aerosol marketer? It means that an exciting new frontier is open for exploration . . . a significant frontier because it represents a vast, untapped market for the aerosol packager . . . a market with proven potential.

As we all know, the biggest selling points of the push-button can are convenience . . . and ease of application. When we consider that the biggest complaint against most powdered products is their inherent messiness . . . and inconvenience . . . the obvious and inevitable conclusion is that powders belong in areosols! . . . And it's interesting to note . . . that the total number of powdered product units sold in the United States last year was more than one and a half times the entire aerosol market!

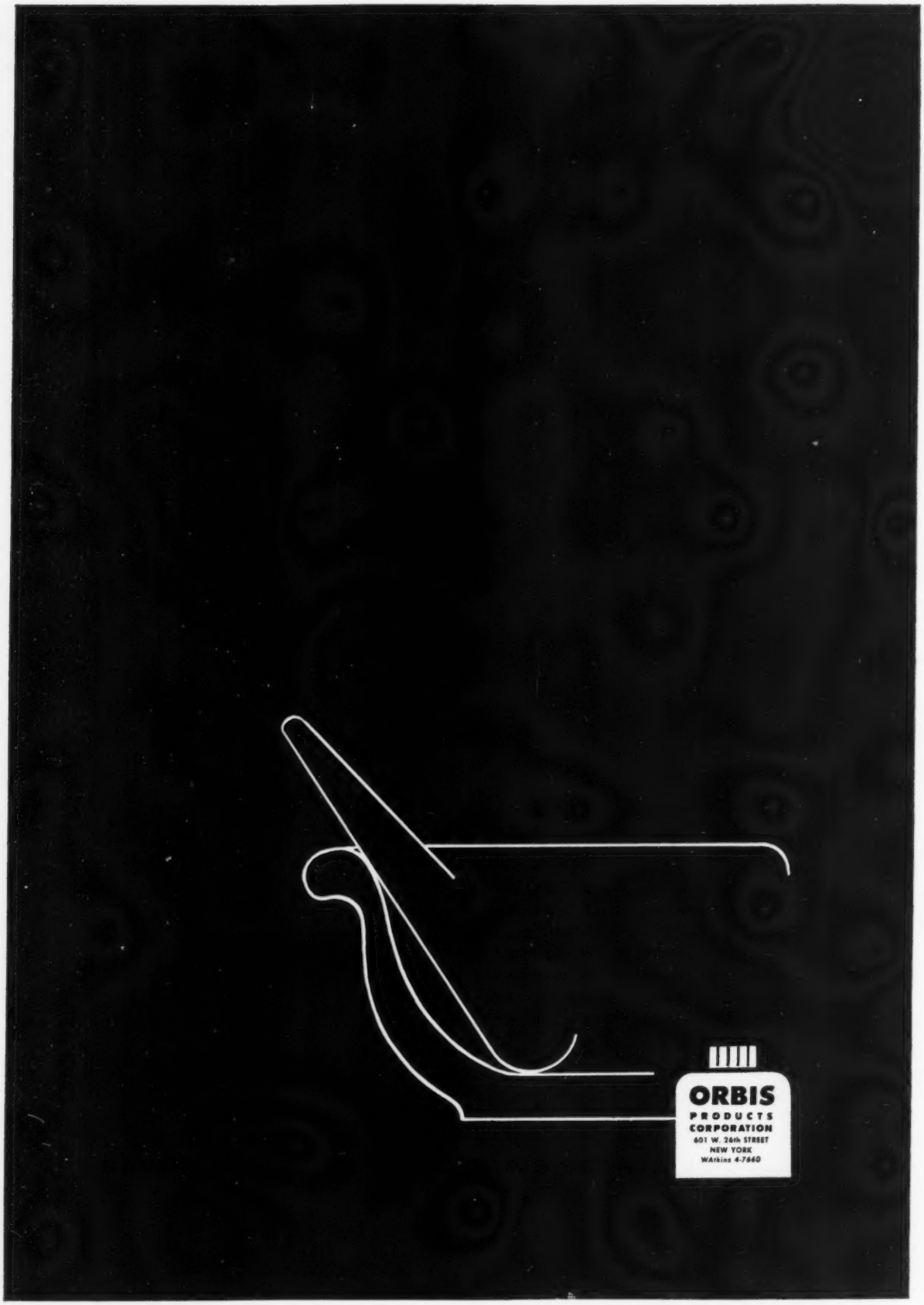
To give you a more specific idea of the tremendous market potential we're dealing with, we've prepared a chart (Figure 1) showing the total number of powdered products, in terms of unit and dollar sales, which will be marketed this year in the United States.

This is an established market of over 650 million units, or 1½ billion dollars annually! . . . as yet, virtually untouched by aerosol packaging!

Had technological advances in aerosols kept pace with the spiraling demand for this convenient package form, the story might be different today. Only recently, however, has it become possible to formulate powdered applications with anything other than very low solids. But now it *can* be done! Powdered aerosols with solids in excess of 25% can now be formu-

*Presented at the 46th mid-year meeting of the Chemical Specialties Manufacturers' Association, Inc., Chicago, May 18, 1960.

Mr. Husted resorts to "aerosol magic" to demonstrate how powdered aerosols can be substituted for liquid toilet bowl cleaners and save weight. In trick, Mr. Husted pours liquid from pitcher into aerosol can. When he tips can, powder falls out instead of liquid, which has mysteriously vanished. Over 25 million units of these cleaners are sold annually.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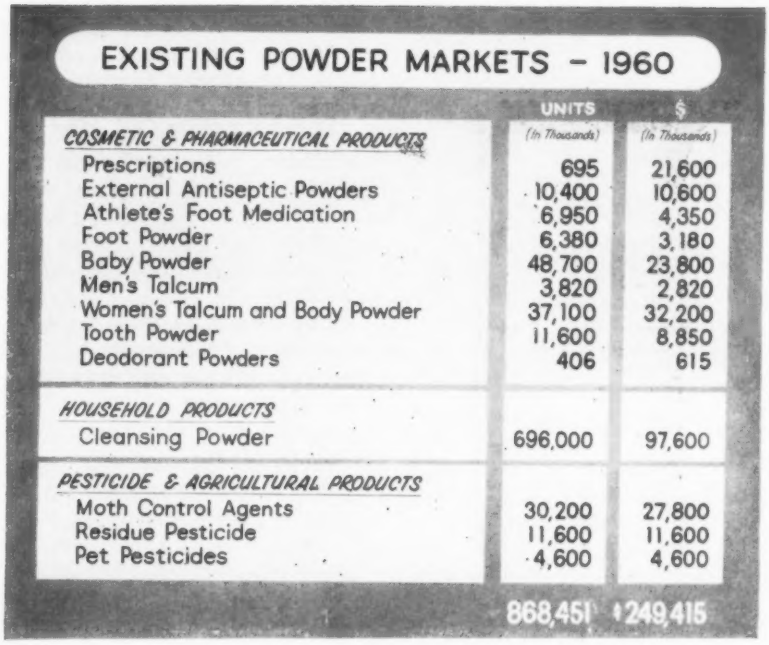

EXISTING POWDER MARKETS - 1960
UNITS (In Thousands)
$ (In Thousands)
COSMETIC & PHARMACEUTICAL PRODUCTS
Prescriptions 695 21,600
External Antiseptic Powders 10,400 10,600
Athlete's Foot Medication 6,950 4,350
Foot Powder 6,380 3,180
Baby Powder 48,700 23,800
Men's Talcum 3,820 2,820
Women's Talcum and Body Powder 37,100 32,200
Tooth Powder 11,600 8,850
Deodorant Powders 406 615
HOUSEHOLD PRODUCTS
Cleansing Powder 696,000 97,600
PESTICIDE & AGRICULTURAL PRODUCTS
Moth Control Agents 30,200 27,800
Residue Pesticide 11,600 11,600
Pet Pesticides 4,600 4,600
868,451 $249,415

Figure 1.

lated successfully . . . and we've *proved* it with actual samples in our technical service laboratory.

For instance, we've developed in our laboratories an aerosol foot powder. It's been tested 5 ways from Sunday . . . and works just great! Think of the convenience . . . and how salable it would be to the consumer! He need never touch this foot powder. There's no muss, fuss or bother. It *sprays* on . . . in just the right quantity . . . in seconds! Yes, it can be done . . . and that established 250 million dollar powder market is just begging for the aerosol can.

What's more, there are many other areas of tremendous potential (Figure 2) . . . over and above this established market. Take tooth powder, for instance. A great many people feel that tooth powder actually does a better cleaning job than tooth paste . . . but they stick to paste because powder is messy and rather inconvenient to use. The aerosol can is the perfect answer here. Another actual powder aerosol with 25% solids which we formulated and tested in our lab. This is a common variety of tooth powder.

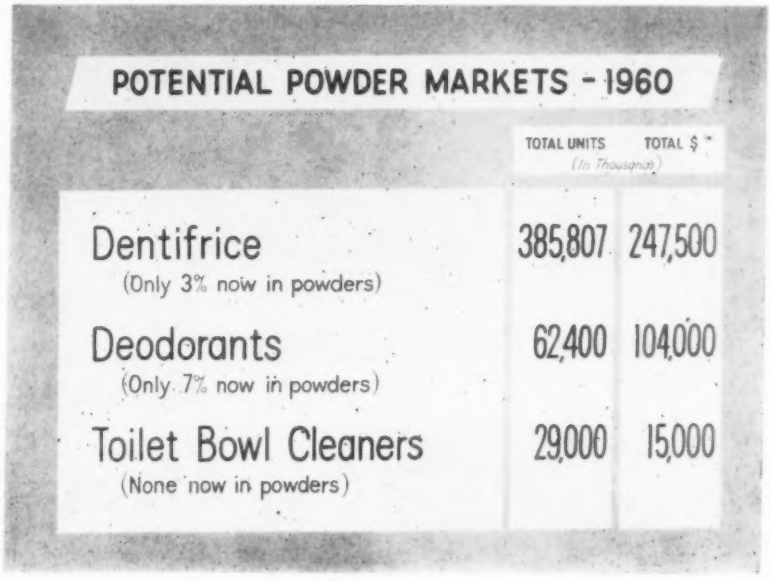
With the introduction of a package form as convenient as aerosols, there is every reason to believe that powder could replace a healthy portion of the tooth paste market. And while the presently established, 11 million unit tooth powder market is nothing to sneer at, — the *total* market for tooth cleaning preparations is well over 300 million units annually.

Now we begin to see other products that could easily . . . should really . . . be marketed in powder form in much greater quantity. And the aerosol can is the big key to this profitable market expansion. Take underarm deodorant. This product category represents an annual sale of over 50 million units of which only 1% are powders. Yet, as any high school chemist knows, the active ingredients in most underarm deodorants are aluminum chloride salts. These salts, of course, are normally dissolved in a liquid or cream of some sort so that they can be conveniently applied to the mature male's more inaccessible areas. Then he waits, while the liquid or cream (which is just along for the ride) evaporates before his deodorant can go to work. Now, supposing our mature male were fortunate enough to have these powdered salts in aerosol form: He just pops out the can, sprays right up into the heart of the matter, and presto!, instant inoffensiveness! Just think what a convenient aerosol package form could do to that ½ million unit deodorant powders market!

Finally, take a common variety of toilet bowl cleaner and disinfectant; (Figure 2) . . . the kind that makes the lavatory smell like a Christmas tree, and is very popular with women. The housewife using this popular cleaner,

(*Turn to Page* 101)

Figure 2.



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Insecticide Residues in Milk

Analysis of milk from cows sprayed with "Lethane 384"

By C. F. Gordon, J. S. Barker, L. D. Haines, and A. L. Wolfe*,
Research Laboratories, Rohm & Haas Co., Philadelphia

INTRODUCED as an insecticide for use on cattle in 1929, "Lethane 384" has enjoyed increasing usage as its effectiveness, uniformity, chemical stability, safety, and economy were recognized. With the advent of chlorinated insecticides in the middle 40's it could no longer compete as a fly killing agent but continued to be used as a component of cattle sprays largely because of its spectacular knockdown. In time another reason for using "Lethane 384" developed when it was found that its addition improved the action of DDT and pyrethrins-synergist type sprays on resistant flies. Chlorinated insecticides were subsequently withdrawn for use in dairy cattle sprays because residues appeared in milk. At present the only insecticides the Federal government permits in oil based sprays for application to dairy animals are "Lethane," "Thanite,"** and pyrethrins plus synergists. (1)

"Lethane" has been widely and continuously used in this application for over thirty years with no reports of milk contamination. With the great concern over residues and the extreme analytical accuracy demanded today, it seemed desirable to conduct precise studies to insure that the proper use of "Lethane" on dairy cows does not result in residues considered significant by current standards.

In order to make the study as practically quantitative as possible, measured volumes were applied with a hand atomizer directly to the animal. When applied in this manner it was found that ½ ounce would cover the animal thoroughly and represents the maximum which should be applied to a cow per application. This gave a coating of the hair similar to that obtained under practical conditions of usage of the long recommended dosage of 1 to 2 ounces per animal much of which never reaches the animal. Previous studies had shown that dosages of 1 to 2 ounces per day applied continuously in the manner described in this paper gave a fouling of the coat of hair.

Experimental

Three healthy dairy cows were obtained from local sources and pastured on an established cattle farm. Two of them were Holsteins (animals one and three) and one was a Guernsey (animal two). Animal three was pregnant at the beginning of the study. During the course of the investigation, cows were maintained in a triangular enclosure with a total area of approximately 1500 sq. ft. This is shown in Figure 1. All during the time of their confinement they were fed alfalfa, timothy grass and water, *ad libitum*. Four foot high wire fencing was used to separate these animals from the herd.

Within this enclosure a spray chamber was constructed in one corner of the triangular plot. This was a wooden frame to which was fastened heavy gauge polyethylene sheeting. The same type sheeting was employed to make a cover for the spray chamber during inclement weather. This cham-

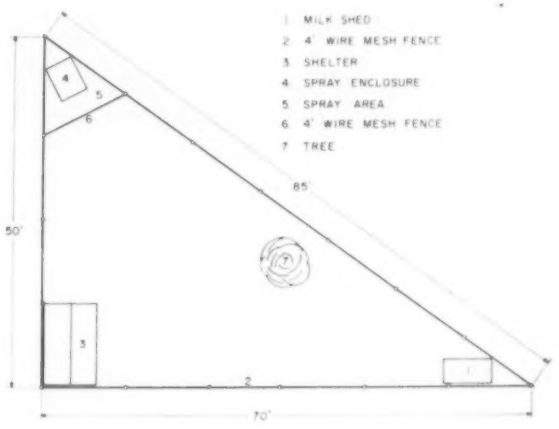

Figure 1.

* Paper presented during 46th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 18, 1960.

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ber could be closed off from the rest of the plot to prevent the animals from entering the spray area.

The milking shed was located at the diagonally opposite apex of the triangular plot. It was so constructed that the cow, when entering the milking shed would go directly into a stall without contacting the major portion of the shed. This arrangement along with the storage of the milking equipment in the shed virtually eliminated the possibilities of contamination of the milk. However, this still left possible avenues open for contamination and steps were taken to eliminate them as described later. During the milking period the animals were fed a commercial dairy feed.

In the remaining corner of the enclosure an animal weather shelter was located.

Each of the three cows was sprayed in a uniform manner by the same operator. A DeVilbiss hand atomizer was employed using compressed air at 5 lbs. pressure to produce an acceptable spray pattern. The individual doing the spraying had only that responsibility and so in no way contacted the milking or collecting apparatus.

To eliminate further the possibility of extraneous contamination of the milk the udders were protected during the spraying. Two plastic bags one inside the other were hung on each animal so they completely enveloped the udders and milk bag. They were clamped in place by means of a harness slung across the rumps of the animals.

Following the application and settling of the spray and before the cow left the spray chamber the first or outer bag was removed. After the animal had been led to the milking shed the second or inner bag was removed. A canvas feed bag was in place over the nose and mouth of each animal during the spraying to keep them quiet and to help in the handling of the animals when they were moved in and out of the spray chamber. This also cut down on inhalation of the spray and prevented the cows from eating grass in the spray area. One person, the assistant sprayer, attached the plastic bags, feed bag, and moved animals. He was not permitted to milk the animals or to handle any of the collection apparatus.

Table I.
Days of Treatment

	Cow 1 (red)	Cow 2 (green)	Cow 3 (white)
Schedule			
Spray Formula & Rate			
Solvent only 0.5 oz./cow/day	0-8	0-8	0-8
3% spray 0.5 oz./cow/day	9-18	9-18	9-18
6% spray 0.5 oz./cow/day	19-26	19-26	19-26
6% spray 0.5 oz./cow/2X day	27-40	27-40	27-40
6% spray 1 oz./cow/2X day	-	-	41-50
Slaughter	40	-	-
Withdrawal	-	40-73	51-86
Slaughter	-	73	86

During spraying, efforts were directed towards applying the spray evenly over the upper neck, upper back, and rump of each animal. The spraying technique allowed the sprayer to have as much of the spray as possible cover the hair as a mist without forming droplets on the end of the hair or wetting the hide.

After spraying, the animals were led to the milk shed and plastic udder cover removed. Here, the assistant sprayer placed a surcingle strap over the back of the animal to hold the milking apparatus. Finally, the last individual concerned in the routine, the milker, took over and first washed the teats (5), with a standard sanitizing solution. Then he attached the milker without coming into personal contact with the animal. Samples of the rinsings from the teats were saved for analysis.

Following milk collection, the apparatus was removed, the milk weighed and transferred to five gallon cans. Here the assistant sprayer removed the surcingle strap and led the animal out of the shed. This entire procedure was followed for all three cows.

Milk production records were kept and the output of the animals was normal. The number 3 cow started to dry up as she approached the end of her gestation period, but otherwise production was normal. In the case of each animal the milk from the morning milking (6 a.m.) was pooled with that from the evening milking (4 p.m.) and aliquots were taken and quick frozen for analysis the next day. The remainder of the milk was frozen within several hours and kept in storage at low temperature (−25°C.)

After slaughtering, various tissues were collected from the animals for analysis of "Lethane 384."

Spray Schedule

Spray schedule and formulations are outlined in Table I. An initial control period of eight days was observed with each animal to determine the amount of interference which could be expected from the milk while not being treated. Portions of the frozen control milk kept in storage were used during the course of the experiment to determine the control values and for recovery experiments.

Analysis

Method: In order to determine "Lethane" residues, 100 milliliters of milk was extracted by the

(*Turn to Page* 95)

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"Triton X-45"* procedure described by Clifford in Food Control Statement 80 (6). The 100 milliliters of milk were aliquoted from a pint of frozen milk which had been thawed in a constant temperature bath at 35°C. "Lethane 384" was determined by a method developed in our laboratory and based on the known procedure of Aldridge (2, 3) as modified by Bruce, Howard, and Hanzol (4). The details of this procedure are being prepared for publication in the very near future.

Interferences due to naturally occuring thiocyanate had to be eliminated (7, 8). By using a 100 ml. sample and two centimeter absorption cells it was possible to detect 0.01 ppm of "Lethane" in milk. Recovery values averaged 70% of the "Lethane" used to fortify blank samples. The blank values were determined from milk samples obtained from each cow prior to the spray treatments using "Lethane." This period is identified as the control spray in the table shown. Samples from the cows sprayed with "Lethane" are corrected for these blank values.

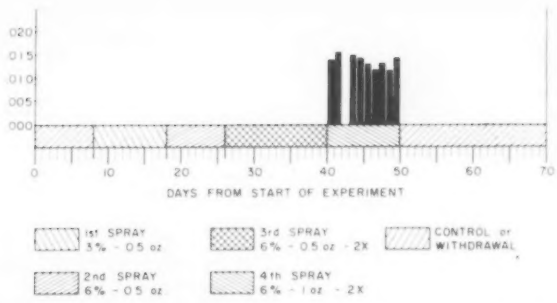
Results and Discussion

Using the first spray formulation and rate as a basis for comparison we have four treatments which might be labeled as 1X, 2X, 4X, and 8X, the base treatment. Looking at Figure 2, we see that "Lethane" residues did not appear in the milk until the last spray treatment, which is eight times (8×) the recommended spray concentration.

In actual practice the residue may be shown as being observed at a usage rate of four times the maximum practical spray rate. This is stated in consideration of the fact that some dairy farmers might prefer to spray twice a day during milking period for maximum comfort of the cattle.

The residue appeared immediately after the first treatment with the highest spray level and

Figure 2.



disappeared the day following withdrawal of that particular spray treatment. The residue level was consistent, ranging between 0.016 and 0.012 ppm during the intervening days.

Tissue samples were collected from the red cow immediately after she was slaughtered. The tissues removed are listed in Table II. Similar tissues were removed from the white cow after several weeks withdrawal time. No "Lethane" was found in any of the tissues. Also, no residues were found in similar tissues taken from the calf which was removed from cow number three after slaughtering. Analysis at various intervals of the sanitizing solution from teat washings showed no "Lethane."

During the experimental period milk production of the animals was normal and no adverse effects were noticed in the general character of the animals.

It is concluded that the repetitive application of oil based sprays containing "Lethane 384" in accordance with current recommendations does not result in "Lethane 384" residues in either meat or milk when analyzed using a procedure sensitive to 0.01 ppm.

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(2) Aldridge, W. H., *Analyst, 69,* 262 (1944)

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(4) Bruce, R. B., Howard, J. W., Hanzel, R. F., *Determination of Cyanide, Thiocyanate, and Alpha-Hydroxynitriles in Plasma or Serum. Anal. Chem., 27,* 1346-47 (1955)

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(6) Clifford, P. A., *Pesticide Residues in Fresh Milk, Survey of 1955-56.* Food Control Statement No. *80,* p. 10, December 1956.

(7) Hudson, J. R., and Pollock, J. R. A., *Determination of Thiocyanate or Cyanide in the Presence of Glycine. Analyst 82,* 374 (1957)

(8) Wokes, F., Wedgewood, P. and Wyatt, J., *Thiocyanates in Milk and Other Biological Fluids, Biochem. J., 50,* XIX-XX (1951).

Table II.
Tissues Removed at Sacrifice

Animal 1 (red cow)		Animal 3 (white cow)
Blood	Bone Marrow	Blood
Liver	Brain	Low Fat Muscle
Spleen	Eye	Liver
Lung	Skin	Heart
Muscle (Striated)	Muscle (Smooth)	Brain
Ovary	Hair	Kidney
Kidney	Hide	Kidney Fat
Udder	Thyroid	Subcutaneous Fat
Fat		
(Mesentary		
(Omentum		
(Kidney		
(Mammary		

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Thomasson Adds Aerosol Production Line

COMPLETION of a new aerosol production department was announced last month by Thomasson of Pa., Norristown, Pa. custom filler. The new line and supporting equipment is engineered for pressure filling, exclusively.

This arrangement eliminates moisture inclusion problems sometimes associated with cold filling equipment, according to Thomasson. Likewise, it dispenses with space consuming heat exchangers, part of refrigerated fillers normally used for concentrate filling and with attendant cleaning problems. Multiple supply piping loops, each with its own pumps, allow many types of concentrates to be handled without risk of contamination. Completely accessible stainless steel product hopper and filler facilitate cleaning and wash-up operations.

Production rates, higher than those normally associated with cold filling equipment, can be achieved with the new rotary crimping and gas pressure filling equipment. Rated output of this line is 120 16-ounce paint and lacquer aerosol units per minute. Because it features separated concentrate feed lines and adjustability to a wide range of container sizes the new installation can load and package any of the commercial can sizes with a wide variety of products, including water-based concentrates, although it was primarily designed to handle paints and lacquers.

The production line is shaped like a lower script "n" with the end of one leg serving as infeed and the end of the other leg as discharge. This allows one fork lift truck to service the entire line from the same direction. Since the warehouse is already palletized, that is a helpful feature.

The new filling-packaging line is isolated from the warehouse by fire walls and fire doors. It is separated from the many pumps and compressors that serve it by walls and in some cases by considerable distances. Special interlock devices permit the line to operate only when the ventilation equipment is running. Many of the conveyors, transfer tables, the filler, crimper and propellant loader are electrically interlocked so that pushing one of several buttons, located about the line, will stop whole section.

A rotary unscrambler feeds a single line coder. Between the coder and product filler the agitator ball, if required, is inserted in the container. Containers then move onto a six lane product filler, which utilizes positive displacement pistons, said to ensure accuracy. Material in the hopper above the metering pistons is kept in agitation to insure uniform composition of concentrates that tend to settle. Valves are inserted after the containers leave the product filler and before they enter the rotary vacuum crimper.

After the valves are crimped in place, the cans enter the rotary pressure filler. Here again the accuracy inherent in piston fillers is used to meter the propellant into the containers. In this particular segment of the line, failure of hydraulic pressure, vacuum pressure, propellant pressure or low concentrate level in the filler will actuate warning devices.

The containers are then passed through a four lane water bath for leak inspection. The four channel system is then turned back to a single lane channel, where the cans are capped by an automatic capper. The finished cans are fed into an automatic case packager, which passes the containers, twelve at a time, into shipping boxes, which are then sealed automatically.

New Pennsalt Plant

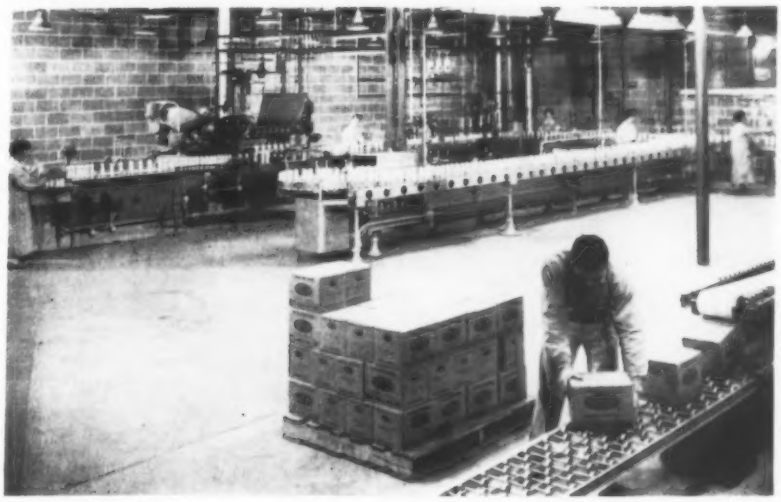
(*From Page 80*)

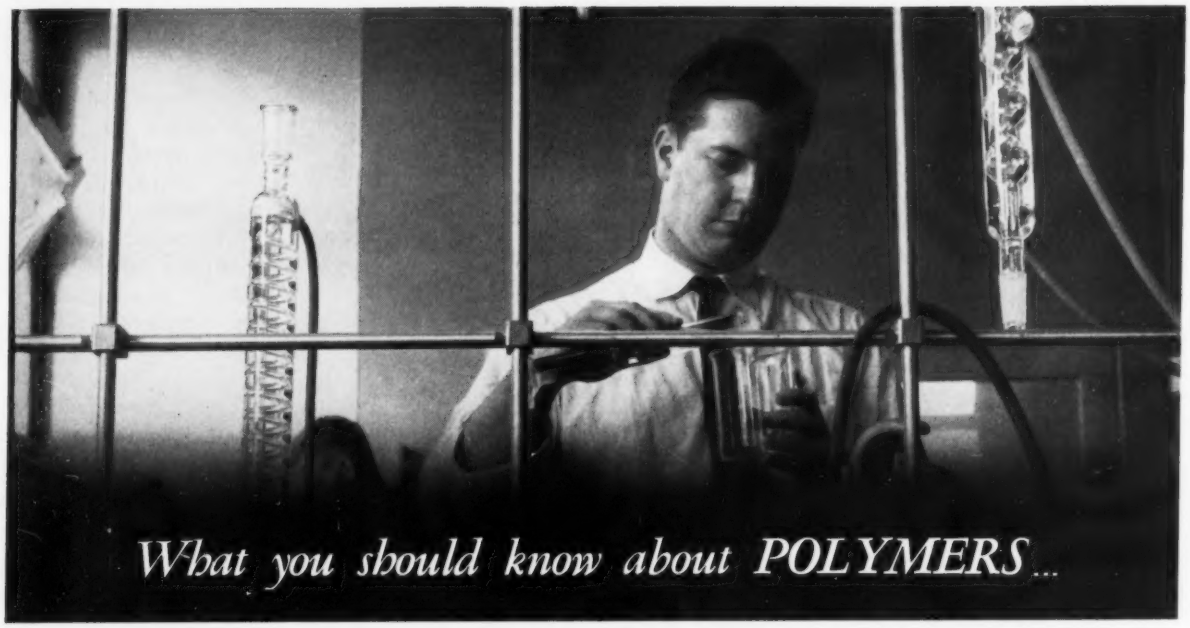
Atlanta was the general contractor for the construction of the plant, using designs prepared by Pennsalt engineers. Warehousing and process area uses 30,000 square feet of the plant's space, while 1,600 square feet are devoted to office space.

George E. Wood of Pennsalt's central engineering department, was project engineer for the Atlanta plant. Previously he served in a similar supervisory capacity for the construction of a like plant in Oakville, Ont., and for the expansion of the chemical specialties plant at Chicago Heights, Ill.

Area manager, who will be responsible for all phases of the new plant's operation, is Robert

New aerosol production department of Thomasson of Pa., Norristown, contract aerosol loader. New line and supporting equipment is engineered for pressure filling, exclusively. Production rates, higher than those of cold filling equipment, are possible with new rotary crimping and gas pressure filling.





What you should know about POLYMERS...

In the short span of seven years, you've heard and read a great deal about the polymers that have revolutionized the floor polish industry. Although the list of available emulsions is impressive, 9 out of 10 floor polish manufacturers still stand by the polymers that outpace and outperform all others . . .

UBATOL

As a series of styrene and acrylic based polymer and co-polymer emulsions, UBATOLS are known for their standout features in the areas of GLOSS and DURABILITY. The specific UBATOL you select for use in your formulation has several distinctions which make it unique. Let's examine their character **one** by **one.**

The U-2000 UBATOL series of polystyrene emulsions provide an excellent base for high gloss floor polishes because of their ultra fine particle size.

U-2001 UBATOL was the first of its kind to make a debut into the floor polish industry and remains today as the standard of the industry. In fact, all of the floor polish made from this polymer since 1953 would amply cover the state of Texas. U-2001 adds **toughness** and **water resistance** to floor polishes with the added advantage of **recoatability.** Formulations made up with this polymer ably resist "whitening" when "second coated"

U-2003 UBATOL has one third the particle size of U-2001 (for greater gloss) and an increased solids content from 36 to 40%.

U-2007 UBATOL is a milky white polymer which was developed to meet the demand for a clear, non-yellowing, floor polish. Because of its exceptional gloss and film clarity, U-2007 is primarily recommended for household floor polishes.

The U-3000 UBATOL series of acrylic emulsions are used as modifying components to improve the toughness and water resistance of polishes compounded with the U-2000 series. In some cases, these polymers are used to improve the "whiteness" of a floor polish. They include:

U-3040 UBATOL . . . Its use will result in hard, tough films.

U-3045 UBATOL . . . Will give flexible, tough films.

U-3050 UBATOL . . . Compromises in hardness between U-3040 and **U-3045 UBATOL.** The compatability of U-3050 with every known wax and resin on the market makes it a potent companion to the U-2000 series.

U-3101 UBATOL . . . Unlike other polymers in the 3000 series, U-3101 UBATOL is a light colored, non-film forming acrylic which, in itself, can be compounded into a floor polish or used as an additive with U-4001 UBATOL. U-3101 combines toughness with built in removability and is recommended for buffable and household formulations.

U-4001 UBATOL stands apart from other U B S polymers. This floor polish component is unique because it combines the excellent gloss of the styrenes with the toughness and durability of the acrylates. U-4001 is rated tops for film clarity.

So, if you have yet to select the right UBATOL for your formulations, drop us a line. Samples, technical data and product consultation available on request.

U B S CHEMICAL COMPANY
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F. Ragsdale, who has held production and administrative positions in both the industrial chemicals and chemical specialties divisions. He was previously area production manager for the Chicago Heights, Ill. and Delaware, O., plants. He joined Pennsalt at its Calvert City, Ky., works when it was constructed in 1959 and served as office manager and accounting supervisor there before being transferred to the specialties division in 1954.

Larry J. Browder, who has served as a special project supervisor and process foreman at the Cornwells Heights, Pa. chemical specialties plant, has been appointed plant supervisor of the new plant. Financial manager, responsible for accounting, credit, and billing activities, is John D. Clinkscales. He joined the company in 1950 as an accountant at the Montgomery, Ala. plant, and has served as office manager at Pennsalt plants in Tacoma, Wash. and Chicago Heights, Ill. and for eastern regional headquarters of the chemical specialties division.

District sales manager for the principal departments which will be served by the new Atlanta plant are Russell Eggert and Ben Stonoga, "B-K" products; Check Morrison, laundry and dry cleaning products; Cooper Schley, metal processing products and machinery; and Merle Semisch, "Isotron" propellants and refrigerants.

★

"pHisoHex" Featured

An antibacterial detergent called "pHisohex" is the subject of an illustrated feature article published in the May/June issue of *Rohm & Haas Reporter*, external house organ of Rohm & Haas Co., Philadelphia. Made by Winthrop Laboratories, the product contains R & H's "Triton X-200," an anionic detergent of the sulfonated ether type. Other components of the formulation include hexachlorophene and special lanolin derivatives.

Originally designed for use in hospitals "pHisohex" now is packaged also for home use in a five ounce plastic bottle.

New "Genetron" Plant

A new plant to produce "Genetron" fluorinated hydrocarbon aerosol propellants and refrigerants will be built by General Chemical Division, Allied Chemical Corp., New York, it was announced late last month. The plant will be located on a site at the firm's Elizabeth, N. J., works. Construction is to begin immediately with completion scheduled for early in 1961, according to Frank J. French, division president.

The new "Genetron" manufacturing unit will be the third such plant operated by the firm; the other two are at Baton Rouge, La., and Danville, Ill. When on stream the new facility will increase General's fluorinated hydrocarbon capacity by more than one third.

Initially, the Elizabeth plant will make "Genetron" 12 (dichlorodifluoromethane), "Genetron" 11 (trichloromonofluoromethane), and "Genetron" 22 (monochlorodifluoromethane). The first two products find extensive use as propellants while all three compounds are widely used as refrigerants in household, industrial and commercial air conditioning and refrigeration equipment.

General Chemical is one of the major producers of hydrofluoric acid, fluorine, and of organic and fluorine inorganic compounds. In addition to the "Genetron" plants the firm produces fluorine compounds at Marcus Hook, Pa.; North Claymont, Del.; Nitro, W. Va.; and Bay Point, Calif.

★

Colgate Shifts Ehrlich

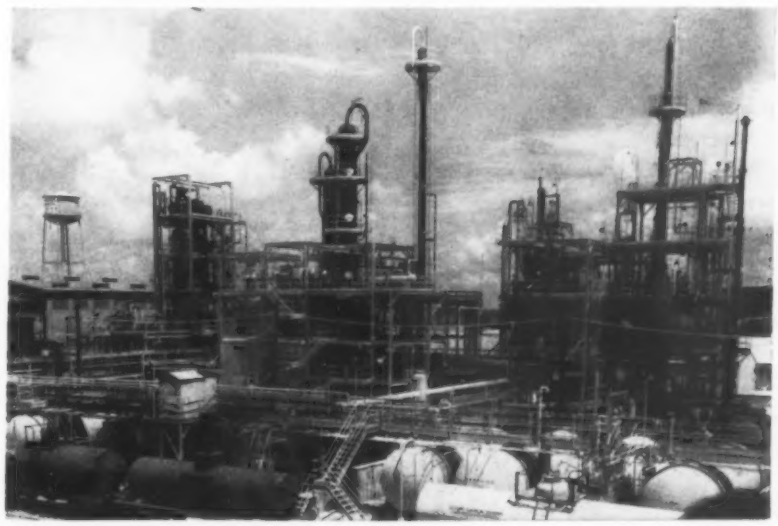
The appointment of Robert L. Ehrlich as plant manager, Household Products Division, at the Kansas City plant of Colgate-Palmolive Co., New York, was announced recently by A. R. Tucker, director of manufacturing for the division.

Mr. Ehrlich previously served as plant manager, Toilet Articles Division, at the company's Jersey City plant.

The appointment to the Midwest installation marks a return there for Mr. Ehrlich who joined Colgate-Palmolive in 1946 as a chemist in the Kansas City plant. In the ensuing years he held various line and staff executive posts prior to becoming plant manager in Jersey City in 1957.

As Household Products Division's plant manager in Kansas City, Mr. Ehrlich will supervise the production of such household products as "Fab," "Ad," "Ajax Cleanser," "Vel," and "Palmolive" and "Cashmere Bouquet" soaps.

New "Genetron" propellant plant of General Chemical Division of Allied Chemical Corp. in Elizabeth, N. J. will be counterpart of Baton Rouge, La., unit shown. It is one of General's two centers for producing "Genetrons."



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Ethyl Alcohol Data

A new 150 page book describing properties, types, and authorized applications of industrial ethyl alcohol became available recently from U. S. Industrial Chemicals Co., 99 Park Avenue, New York 16. The book contains detailed data on pure ethyl alcohol, denatured alcohol, and proprietary solvents. Volumetric equivalents for proof are tabulated and test methods and a glossary of terms are appended. Physical properties are covered and literature references supplied.

Possibly the most useful feature of the manual is a 20 page supplement, separately bound, giving pertinent government regulations. Plans call for reprinting the supplement as regulations change.

Hazardous Substances

(*From Page* 84)

action specified in such authorization (including destruction or export of rejected hazardous substances or portions thereof, as may be specified in the Secretary's authorization). All such relabeling or other action pursuant to such authorization shall, in accordance with regulations, be under the supervision of an officer or employee of the Department of Health, Education, and Welfare designated by the Secretary, or an officer or employee of the Department of the Treasury designated by the Secretary of the Treasury.

(c) All expenses (including travel, per diem, or subsistence, and salaries of officers or employees of the United States) in connection with the destruction provided for in subsection (a) of this section and the supervision of the relabeling or other action authorized under the provisions of subsection (b) of this section, the amount of such expenses to be determined in accordance with regulations, and all expenses in connection with the storage, cartage, or labor with respect to any hazardous substance refused admission under subsection (a) of this section, shall be paid by the owner or consignee and, in default of such payment, shall constitute a lien against any future importations made by such owner or consignee.

SEPARABILITY CLAUSE

Sec. 15. If any provision of this Act is declared unconstitutional, or the applicability thereof to any person or circumstance is held invalid, the constitutionality of the remainder of the Act and the applicability thereof to other persons and circumstances shall not be affected thereby.

TIME OF TAKING EFFECT

Sec. 16. This Act shall take effect upon the date of its enactment; but no penalty or condemnation shall be enforced for any violation of this Act which occurs —

(a) prior to the expiration of the sixth calendar month after the month in which this Act is enacted, or

(b) prior to the expiration of such additional period or periods, ending not more than eighteen months after the month of enactment of this Act, as the Secretary may prescribe on the basis of a finding that conditions exist which necessitate the prescribing of such additional period or periods: Provided, That the Secretary may limit the application of such additional period or periods to violations related to specified provisions of this Act, or to specified kinds of hazardous substances or packages thereof.

APPLICATION TO EXISTING LAW

Sec. 17. Nothing in this Act shall be construed to modify or affect the provisions of the Flammable Fabrics Act, as amended (15 U.S.C. 1191-1200), or any regulations promulgated thereunder; or of chapter 39, title 18, United States Code, as amended (18 U.S.C. 831 et seq.), or any regulations promulgated thereunder, or under sections 204 (a) (2) and 204(a) (3) of the Interstate Commerce Act, as amended (relating to the transportation of dangerous substances and explosives by surface carriers); or of section 1716, title 18, United States Code, or any regulations promulgated thereunder (relating to mailing of dangerous substances); or of section 902 or regulations promulgated under section 601 of the Federal Aviation Act of 1958 (relating to transportation of dangerous substances and explosives in aircraft); or of the Federal Food, Drug, and Cosmetic Act; or of the Public Health Service Act; or of the Federal Insecticide, Fungicide, and Rodenticide Act; or of the Dangerous Drug Act for the District of Columbia (70 Stat. 612), or the Act entitled "An Act to regulate the practice of pharmacy and the sale of poisons in the District of Columbia, and for other purposes," approved May 7, 1906 (34 Stat. 175), as amended; or of any other Act of Congress, except as specified in section 18.

REPEAL OF FEDERAL CAUSTIC POISON ACT

Sec. 18. The Federal Caustic Poison Act (44 Stat. 1406) is repealed effective at the close of the sixth calendar month after the month of enactment of this Act, except that the Federal Caustic Poison Act shall remain in full force and effect with respect to any "dangerous caustic or corrosive substance" (as defined by that Act) which is an article subject to the Federal Food, Drug, and Cosmetic Act and which is, by virtue of paragraph 2 of section 2(f) of this Act, excluded from the term "hazardous substance" as defined in this Act; Provided, That, if the Secretary, pursuant to section 16(b) of this Act, prescribes an additional period or periods during which violations of this Act shall not be enforceable and if such additional period or periods are applicable to violations of this Act involving one or more substances defined as "dangerous caustic or corrosive substances" by the Federal Caustic Poison Act, that Act shall, with respect to such substance or substances, remain in full force and effect during such additional period or periods: Provided further, That, with respect to violations, liabilities incurred or appeals taken prior to the close of said sixth month or, if applicable, prior to the expiration of the additional period or periods referred to in the preceding proviso, all provisions of the Federal Caustic Poison Act shall be deemed to remain in full force for the purpose of sustaining any proper suit, action, or other proceeding with respect to any such violations, liabilities, and appeals.

Aerosol Powders

(*From Page* 89)

buys – literally a pitcher full of liquid, and in doing so, she pays the extra freight for about a quart and a half of useless water. Here, again, the active ingredients in their original form are actually powder. All the water needed for mixing purposes in a bowl cleaner can be had just by pulling the chain, at the point of application. What's needed, of course, is economy through condensation. If we could get rid of all the liquid and come up with the powder only we'd have a lighter, cheaper, product, easier to store, and to use. Put it in the ultra-convenient aerosol can and the women would love it! And please bear in mind that the total market for toilet bowl cleaners is over 25 million units annually.

Still discussing the tremendous potential for aerosol powders, we've left many areas uncovered. The food and grocery market, for instance . . . sure to come along shortly. And, most important of all, the expansion which might readily occur in any of these individual markets with the introduction of a better package form such as the aerosol can. For example, in Figure 3, we show what's happened to the insecticide market since the advent of aerosol pack-

DISINFECTANTS

don't HAVE to smell like it!

And that goes for your other sanitary supplies too! *Para blocks, naphthalene crystals, liquid soaps, polishes, waxes* and *cleansers*... an increasingly "odor conscious" public demands that they be pleasantly scented as well as effective. Build your sanitary products sales by giving them a subtle, appropriate fragrance that is distinctively their own. Make it an integral part of your brand recognition. To assist you in this effort, the D&O Industrial Odorant Labs are at your service. Sanitation alone is not enough... not today! Let the D&O industrial perfumers give to your sanitary supplies that essential extra... a scent that will add many dollars worth of sales appeal value.

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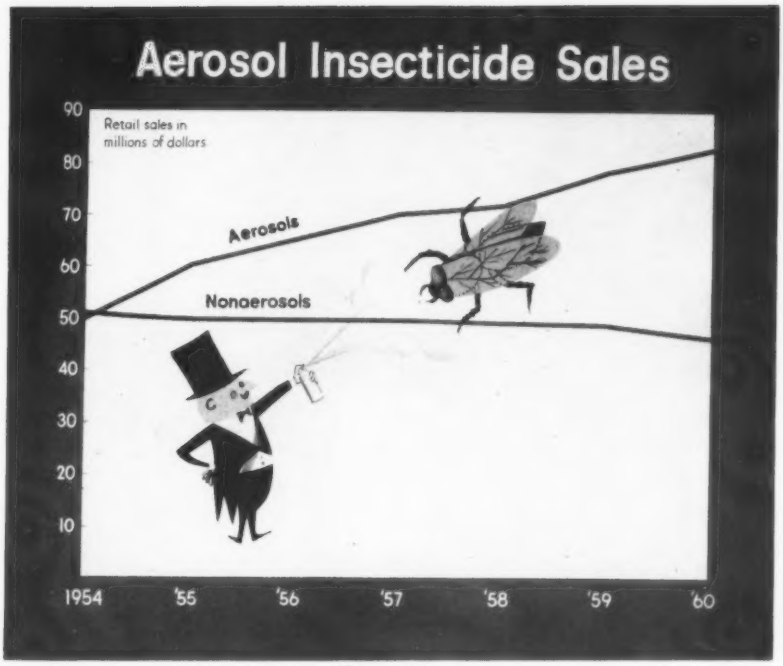

Figure 3.

aging of this product group.

If you were to estimate the potential market expansion the introduction of aerosol packaging might effect in all the other product areas we've discussed, by applying the same type of gross curve, you could readily expect a total market for aerosol powders in excess of a billion units!

These are magical figures, magical figures, indeed. And anybody with the initiative and imagination to capitalize on this tremendous potential will find a mound of money at the end of *this* aerosol rainbow, and I mean big money!■

Aerosol Colognes

(*From Page* 57)

room.

And here is another piece of empirical information: One may compare on test papers the odor of an insecticide solution alone with that of the same solution incorporating a small addition of perfume (about one per cent) and one will find the objectionable odor well covered. However, the same perfumed solution dispensed by fluorinated hydrocarbon propellant into the air will frequently be found lacking in perfume.

Now let us compare the olfactory effect evoked by an aerosol cologne serving to perfume a surface such as the human skin and that produced by eau de cologne applied in conventional form. Is there a difference? None can usually be detected between skin perfumed by manual application of a given quantity of fragrance and skin perfumed by an aerosol dispensed spray.

If the dispenser is held at a fair distance from the target surface one may momentarily perceive a slightly different odor, probably emanating from the jet travelling from the container to the skin. Examination of the skin will rarely show any difference.

Another observation reveals that if one is in a room with a woman spreading a strongly scented lacquer on her hair the odor perceived at a fair distance from the subject may differ from that perceived on the hair itself.

What explains these phenomena? Odor sensation evoked by a perfume spread on a test strip develops with its evaporation. The fragrance of a well formulated perfume is the combined outcome of all the various odors emanting from its individual ingredients and not of these different odors superimposed one on top of the other. Let us assume that by some means evaporation is accelerated even while the ratio of the evaporated ingredients remains intact. Odor intensity is increased with the greater volume of volatilized material hitting the olfactory nerve. In addition, the quality of the odor may change. Actually, odor nuances of certain materials are known to change with degree of dilution.

The area of evaporation of a product dispensed from aerosol into the atmosphere of a room is enormous compared with that of an equal amount distributed on a test strip. This difference will certainly modify odor intensity and may alter odor nuances in certain instances, hard to foretell, because of the complexity of fragrance products.

With the release of an aerosol spray there is yet another phenomenon at work: Due to instantaneous evaporation of the liquified gas propellant, the product is dispensed in the form of tiny droplets. This means release of an enormous quantity of gas in intimate contact with a liquid and entrainment of compounds partly in liquid, partly in vapor state. We know that, in a process calling for the bubbling of gas through a liquid, the gas—however carefully filtered — will still contain a certain amount of the liquid in vapor form. The amount entrained is known to be determined by the vapor pressure of the liquid phase, area of contact, and discharge or flow rate of the gas. In our instance the volume of gas is large, the area of contact almost ideal. Consequently, there are droplets of liquid in the air which evaporate rapidly and a simultaneously formed vapor phase composed of propellants, alcohol, and perfume compounds. Composition and quantity of these fragrance compounds depend mainly upon volatility of the constituents original-

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ly incorporated into the perfume.

Initially, at zero time, the olfactory stimulus can be derived only from the vapor phase. However, between the instant of release and the first moment of odor perception there is a time lag, a "dead" interval, the length of which depends upon the products involved. During this interval the initially formed vapor phase begins to be enriched by evaporation of the droplets. Its composition must certainly vary from the vapor phase derived by quietly evaporating the same perfume for the same length of time from a test paper or the skin. This difference is sufficient explanation, we believe, for the difference in odor.

Since the time, many years ago, when eau de cologne was first discovered, the cologne fragrance has not only remained in fashion but has been developed and its applications are still growing.■

Dry Cleaning Detergents

(*From Page* 64)

possibly be regarded as indicating reduced availability of detergent ions.

Stokes and Robinson (21) have interpreted vapor pressure data for electrolytes in the concentration range of 7 to 20 molal as an adsorption phenomenon. Their values for the heat of adsorption of water in the first hydration layer are in the range of 1 to 3 kilocalories in excess of the heat of liquefaction of pure water. The heat of sorption of water into the micelle, however, is very nearly the same as the heat of liquefaction of pure water. This suggests reduced availability of hydration sites on detergent ions.

Aebi and Wiebush (10) determined the solubility of NaCl at room temperature in 0.05N and 0.1N "OT" in dodecane and perchlorethylene solutions containing varying amounts of water. They found the salt uptake of such water containing micelles to go up with the detergent concentration as well as with the water content (Fig. 11). Above 1.55 moles of water per mole "OT," the solubility of NaCl is proportional to the water content. According to Aebi and Wiebush 140.5 g NaCl are soluble in 1 liter micellar water as compared to 370 g per liter of free water. A much smaller amount of NaCl is solubilized at a water content below 1.55 moles per mole "OT," another indication of stronger bonding between very small additions of water and the "OT" molecules of the detergent. These workers suggest that addtions of water to anhydrous solutions produce progressive ionization of "OT." The water is held by the detergent in two forms: as water coordinately bound to the Na ion and proportional to the "OT" concentration and as free water in which NaCl dissolves just as in bulk water.

(c) Kinetics of water exchange

We have established that an equilibrium exists between micellar water content and water regain of fabrics immersed in such a solution. Optimum soil removal is obtained with systems where water equilibrium has been established. Information about the mechanism of the equilibrium water exchange between micelles and fabric, however, is still lacking. We therefore investigated the rate of water exchange between micelles and fabric in a system in which water equilibrium is established. All of the water incorporated into the detergent micelles of 2% "OT" in dodecane was tagged with 10% deuterium oxide (D_2O). Viscose rayon swatches were conditioned to a certain relative humidity in air. From previous work these conditioned swatches were known to be in equilibrium with the total water – D_2O mixture which was incorporated into the micelles. Therefore, water content of the micellar solution as well as of the fabrics, remains unchanged after combining fabrics and detergent solution. The D_2O concentration in the solution, however, will be reduced from its original value before immersion of the fabrics, according to the speed of the water exchange.

Many factors will influence this exchange rate of water between micelles and fabric. Temperature, type and concentration of detergent, the physical nature of the viscose rayon fibers and fabric, the ratio of solvent to fabric, the dimensions of the system, and agitation time and speed will determine the rate of the D_2O-exchange. Therefore results obtained are meaningful only for one particular set of conditions.

The change of the concentration of D_2O per second, dx/dt, is proportional to its weight fraction in solvent and fabric. The simple rate equation $dx/dt = -kx + ky$ applies. Substitution of the experimental data and integration yield a rate equation in which the rate constant was calculated after different mixing times.

Several preliminary experiments conducted with fabrics which had been conditioned at 75% relative humidity to attain a regain of 15% which is in equilibrium with 0.24% micellar water in the 2% "Aerosol OT" solution showed that exchange of water was taking place at a rate too rapid for accurate determination. This is

(*Turn to Page* 108)

Table III. Exchange Rate of D_2O between Rayon and 2% "OT" in Dodecane

1 Temp. (°C)	2 % Rel. humidity	3 % $H_2O + D_2O$ in solvent (wt./vol.)	4 % Regain (wt./vol.)	5 Time of run (min.)	6 Rate constant k
30	63	0.164	12.3	6	0.14
30	61	0.152	12.0	7.5	0.13
30	63	0.162	13.0	11	0.13
20	59	0.150	11.1	6	0.14

Invitation to Canada....

The Canadian Manufacturers of Chemical Specialties Association extends a cordial invitation to all companies in the United States and Canada to attend its third annual meeting to be held at the

QUEEN ELIZABETH HOTEL
Montreal, Quebec
October 24-26, 1960

Business sessions will include discussions on a wide variety of subjects of particular interest to the chemical specialties industry of Canada. There will also be group sessions for the various div sions of the Association - Aerosol, Automotive, Disinfectants and Sanitizers, Pesticides, Soaps and Detergents, and Waxes and Floor Finishes.

The Canadian Manufacturers of Chemical Specialties was formed in 1958 to cater to the specific interests of manufacturers in and suppliers to the chemical specialties industry throughout Canada. Accordingly, all companies with an interest in this rapidly growing field will receive a cordial welcome at our annual meeting in October.

Geoffrey Atwood

President

For further particulars,
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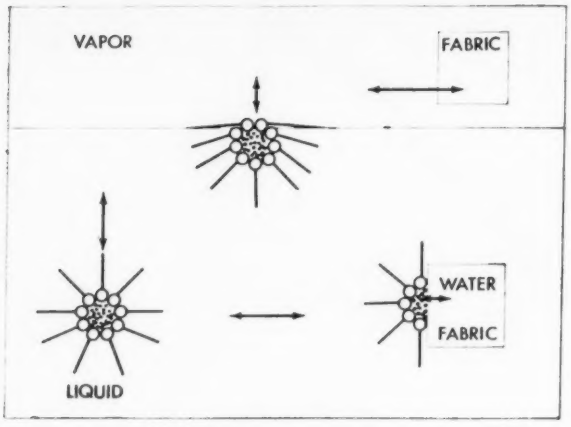

Figure 12. Schematic representation of mechanism of direct exchange of micellar water.

(*From Page* 105)

significant because it represents the optimum conditions for water soluble soil removal in the dry-cleaning washer.

Table 3 shows results for regains of from 12% - 13%. They were obtained by conditioning rayon at close to 65% relative humidity, which is in equilibrium with 0.15% - 0.16% of micellarly solubilized water in the solvent and at a temperature of 30°C. The rate constant k was calculated to be 0.13 - 0.14 as shown in column 6. Calculations of the rate constants for runs of six, 7.5, and 11 minutes yielded constant values for k and gave confidence in the validity of the established equation. Small temperature and regain variations did not change the rate constant significantly.

According to Rowen and Blaine (22) 1 gram of rayon has an adsorptive surface of 0.98 m². On this basis, approximately 5 mg of water will exchange every minute per square meter of the viscose rayon surface.

Two suggestions for the mechanism of exchange of water in nonaqueous micellar solutions may be considered: (A) The exchange of micellar water with the vapor phase or the fabric phase could be mediated by the small amount of water which is in true solution in the hydrocarbon solvent, or (B) micellar water may exchange directly from micelles to fabric or vapor phase without passage of water through a true solution state (Fig. 12).

Summary

Non-aqueous detergent micelles and their behavior in dry-cleaning systems are examined. Micelles of "OT" in hydrocarbon solvents contain water in the core which is surrounded by a mono-

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layer of detergent molecules. They are of spherical or near spherical shape. The diameter is about twice the length of the "OT" molecule, which increases with additions of water. The first 5 moles of water appear to be bound more strongly to "OT" than later additions.

Micellar properties of the drycleaning bath can be used to control the water content at a constant level for consistent superior soil removal with safety to fabrics. Devices using conductivity or relative humidity control are practical. An equilibrium is established between micellar moisture content and water regain of fabrics which, at room temperature and for low moisture levels, is the same as in air. Different relations prevail at higher humidities and temperatures. Vapor pressure-temperature relations for micellar water and water in rayon are comparable to those for concentrated electrolyte solutions in water with the heat of vaporization comparable to that of pure water. The polar ends of "OT" seem to form a very concentrated solution in the water core.

Water exchange between micelles and fabrics was followed by D_2O tracer. Approximately 5 mg of water exchange each minute per square meter of rayon surface. Direct exchange of water between micelles and fabric and between micelles and air is proposed as the most likely echange mechanism.

Acknowledgement

The author expresses her gratitude to P. V. Warren and C. E. Stauffer for their assistance in publishing this paper.

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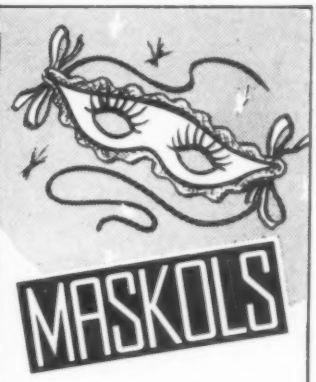
MANUFACTURING CHEMISTS SINCE 1904 . . . MANUFACTURING CHEMISTS SINCE 1904 . . .



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Lower your costs with hydrocarbon propellants

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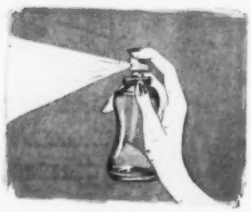

We are fully equipped for high-speed filling of pressurized units utilizing hydrocarbons (propane, butane, etc.) as propellants *with consequent savings in your costs per package-unit.*

These propellants are ideal for a wide range of products such as charcoal starters, window cleaners, shaving creams, cosmetics, polishes, and so on.

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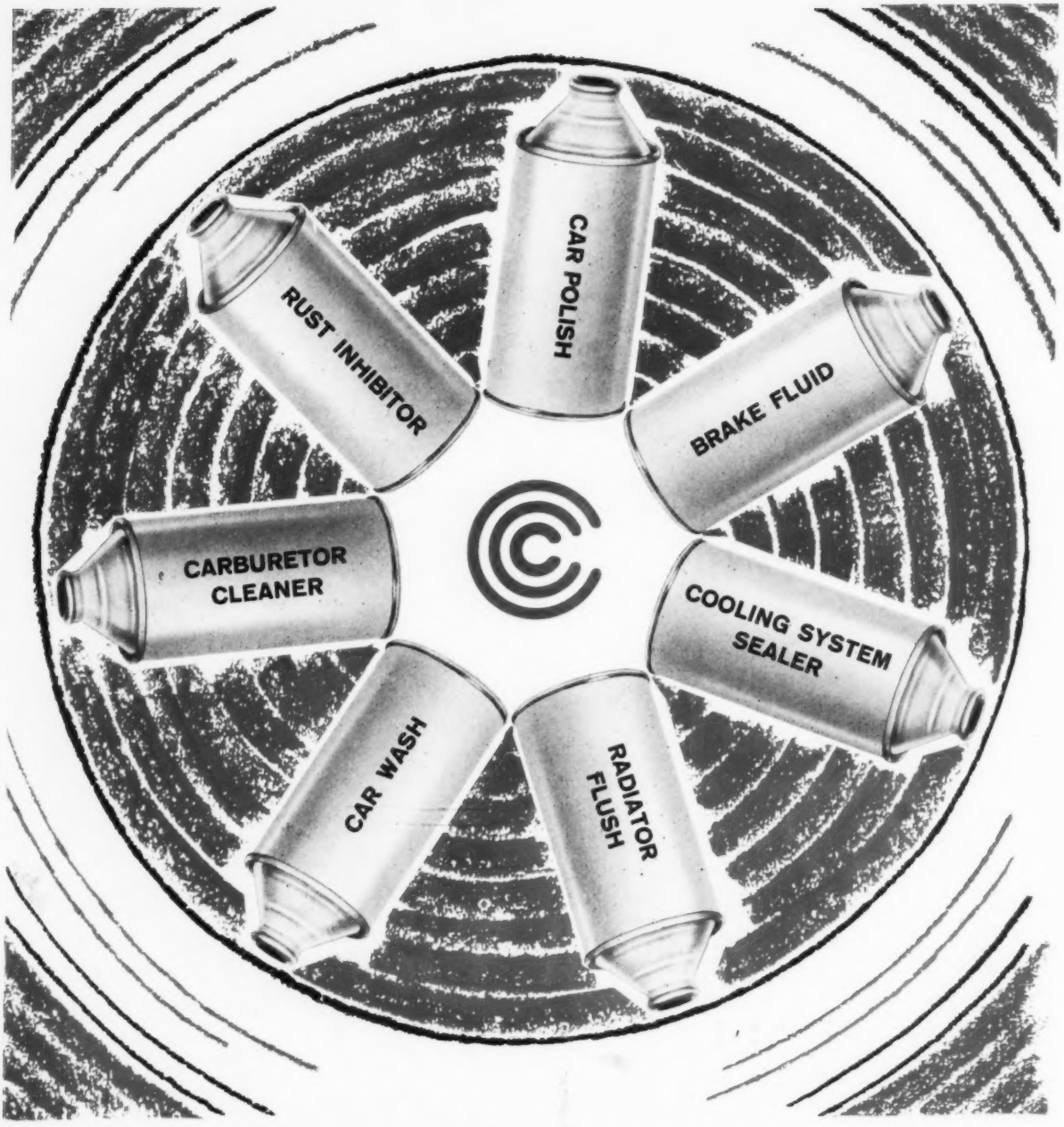
Packaging...

AEROSOLS · LIQUIDS · PASTES · POWDERS

Horizon Industries, Minneapolis, has adopted this polyethylene bottle by Plax Corp., Hartford, Conn., for its new "Rally" concentrated tile cleaner. Package, which holds 32-ounces of product, features swivel plastic lock-shut combination pour-spout cap. Liquid cleaner, which is blue, gives that color to white, silk screened bottle. Product contains germicide.

Automotive Chemicals
Cleaners
Detergents
Deodorants
Disinfectants
Floor Products
Insecticides
Laundry Bleach
Metal Cleaners
Moth Products
Polishes
Shampoos
Shave Products
Soaps
Liquid Starch
Toiletries
and other
Chemical Specialties

A market for over 25 billion packages annually



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Sizes range from 4 oz. to 16 oz. Choice of closures available for most sizes

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packaging notes

22nd Annual National Packaging Forum

THE Packaging Institute's 22nd Annual National Packaging Forum will be held Oct. 31-Nov. 2 at the Statler-Hilton hotel in New York, it was announced late last month. The forum's theme is the future of the $17 billion packaging industry during the next decade. More than 50 packaging experts will present their papers and forecasts. Roy W. Abling of the Merck Sharp & Dohme division of Merck & Co. is the chairman.

On Monday, Oct. 31, one presentation, "Packaging Potentials for the '60's," and three seminars are scheduled. The seminar subjects are: packaging for self-service, at which Thomas E. Cathart, Jr., sales manager of folding cartons for Continental Can Co., will speak. Other topics include packaging research, and corrugated and fiberboard materials.

Drugs and pharmaceuticals will be discussed at the first of three seminars, Tuesday, Nov. 1. Speakers include W. O. Bracken, active in plastic sales development for Hercules Powder Co. and W. J. Graham, manager of the blown plastics division of Owen-Illinois Glass Co. Production line and machinery, and printing will also be the subject of seminars on the same day. Among the speakers on printing will be Albert Knerr, director of the design laboratory of Container Corp. of America, Mel Kernan, plant manager of the Ohio Boxboard Division of Packaging Corp. of America, and Robert Downey, research director of the Marathon Division of American Can Co.

At the first seminar, Wednesday, Nov. 2, flexible packaging and plastics will be discussed by Orville R. Johnson, manager of the product department of Western-Waxide Div., Crown Zellerbach Corp. Three representatives of Plax Corp.: Jules Pinsky, chief physicist; Brooks P. Heise, product engineering manager; and J. H. Parliman, technical service manager, will also speak. Fred W. Schreiber, packaging development chief of Lever Brothers Co. and chairman of a symposium on food packaging, announced that W. Earl Graham of the eastern sales division of Clayton Corp., will speak on the aerosol packaging of foods. Mr. Graham's talk will cover constituents, containers, valves and propellants as well as equipment and facilities for filling and processing, including new developments in propellants. The remaining two events will be a seminar on closures and an open meeting of the petroleum packaging committee.

Daily, transferable registration for PI members is $25.00 for Oct. 31, $25.00 for Nov. 1, and $20.00 for Nov. 2. The three-day member rate is $65.00. Non-member daily rates are $35.00 for Oct. 31, $35.00 for Nov. 1, and $30.00 for Nov. 2. The three-day rate is $95.00. Registration inquiries should be directed to Charles A. Feld, executive director, Packaging Institute, 342 Madison Ave., New York 17, N. Y.

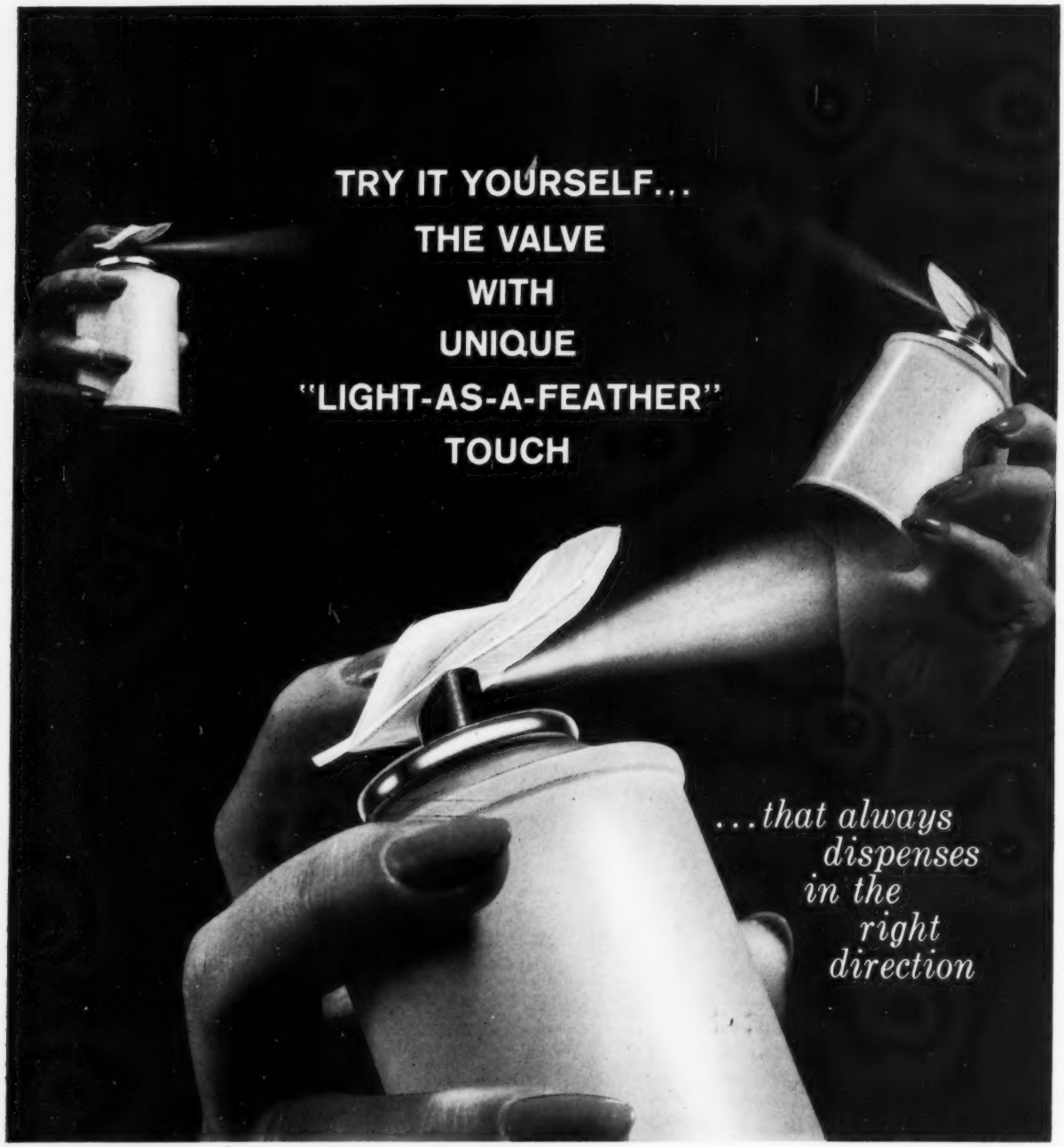
—★—

New Transparent Film

A new transparent linear polyethylene film which adheres to any wet smooth surface is suggested for point of purchase display by its manufacturer, the Flexible Packaging Division of Continental Can Co., Mt. Vernon, O. The material can be printed by flexographic process to make a display piece said to be less expensive than currently used acetate stickers.

Static in the film performs the adhering function, so all that need be done is to wet a surface such as window glass or a mirror and apply the film.

Accepting congratulations on the celebration of his company's 25th anniversary is Steve Resina (right), president of Resina Automatic Machinery Co., Brooklyn, manufacturer of automatic capping and sealing machinery. Congratulating Mr. Resina are Alvin G. Hornney (left) of Hornney and Co., sales representative for Resina in the Metropolitan New York area and Edward Wixsted (center), manager of industrial engineering, Schering Corp., Union, N. J. Mr. Wixsted was guest speaker at the recent anniversary celebration held at the Brass Rail, New York City. Mr. Wixsted holds a plaque presented to Mr. Resina by the 16 firms and individuals serving as Resina sales representatives in the United States and Canada. The firm was founded in 1935 by Mr. Resina's father, Manuel S. Resina. Today, Resina automatic high speed cappers are used in more than a dozen industries in 27 countries.



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Buckley to Knox Glass

Christopher H. Buckley is now vice-president and director of sales and marketing for Knox Glass,

Christopher H. Buckley

Inc., Knox, Pa., manufacturer of glass containers, according to a recent announcement.

Mr. Buckley previously was general manager of the aluminum container division of Kaiser Aluminum and Chemical Corp. Before that he was with Continental Can Co. as national product sales manager in charge of beer and carbonated beverage sales, and with Pepsi-Cola Bottling Co., New Haven.

★

Fibre Drum Assn. Ends

The Fibre Drum Manufacturers Association will be dissolved in a few weeks, it was announced after a special meeting in New York on June 22.

Inadequate participation and representation resulted in the termination action, despite the continued growth of the fibre drum industry. The exact date of termination has not yet been decided.

H. M. Walter, Continental Can Co., New York, has served as president of the association for the past two years. W. D. Cox, Sr., Fibre Drum Co., Chicago, has been vice-president.

★

Glass Containers Record

Glass Container Manufacturers Institute, Inc., New York, recently announced that domestic shipments of glass containers for chemicals, both household and industrial, set an all-time high in 1959.

The year-end total of 13,305,000 gross, or 1,915,920,000 units, represented an increase of 16.1 per cent over the 1958 total of 11,459,000 gross, or 1,650,096,000 units, The 1959 total was also an increase of 8.9 per cent over the previous high of 1957, when 12,223,000 gross, or 1,760,112,000 units, were shipped.

The figures were announced in a new booklet entitled "Glass Containers—1959," issued by the Institute.

★

Crown Cork Names Thomas

Crown Cork & Seal Co., Philadelphia, recently announced appointment of Charles L. Thomas as Milwaukee district manager. Mr. Thomas has been with Crown on the West Coast as manager of purchasing, office and plant manager, and sales representative for the past 21 years.

★

Rogers Joins Southwestern

Gordon W. Rogers recently joined the sales staff of Southwestern Steel Container Co., Dallas. Southwestern is one of seven manufacturing plants of Vulcan-Associated Container Companies, Inc., Birmingham, Ala.

Mr. Rogers has been a salesman in the Dallas area for the past 11 years. His headquarters are at the plant's main office in Dallas, and he contacts steel pail and drum users in the Southwest.

Gordon W. Rogers

Weir CCC Regional Mgr.

Donald L. Weir was recently appointed Pacific regional sales manager for the Hazel-Atlas glass

Donald L. Weir

division of Continental Can Co., New York. He succeeds M. J. Olds, who was made executive sales representative.

Mr. Weir was formerly sales manager for metal cans in the company's Chicago district. His headquarters are in San Francisco.

★

S. W. Menefee, Jr., Dies

Samuel W. Menefee, Jr., 53, manager of the package development and merchandising department of the packaging materials division, Armstrong Cork Co., Lancaster, Pa., died July 17 of a heart attack.

Mr. Menefee was transferred to the general office in Lancaster in 1940, developing what is now the package development and merchandising department. He established and ran for many years Armstrong's sales training program for the packaging materials division.

★

Two Join Plax

Plax Corp., Hartford, Conn., originators of the plastic squeeze bottle, recently appointed John W. Schmid advertising and sales promotion manager and Ralph H. Smith manager of plastic cartons.

Mr. Schmid joins Plax after eight years of advertising experience with Du Pont. Before coming to Plax, Mr. Smith was with Diamond National Corp.

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DRUM LINERS ★ BAGS ★ CARTON LINERS

ALL STYLES • ALL SIZES

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The largest manufacturer in the U.S.A.
concentrating on ROUND bottom and
STRAIGHT bottom LINERS . . . the FINEST!

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SUCCESS!

LOW, LOW, PRICES!

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Colton Advances Two

Arthur Pearce was made sales engineer in the eastern branch office and Robert Clark was named

Arthur Pearce

Robert Clark

director of customer service of Arthur Colton Co., Detroit, it was announced late last month.

Mr. Pearce joined Colton in 1954. He has been assistant to the sales manager, director of inventory control, and since 1956, director of customer service. The new sales engineer handles the sales of Colton tabletting, filling, and related pharmaceutical, chemical, and cosmetic industry machinery. His offices are at Colton's eastern branch in Englewood, N. J.

Mr. Clark, new director of customer service, succeeds Mr. Pearce. He has been with Colton since 1955, and for the past few years was assistant to the sales manager.

Plax Advances Two

Plax Corp., Hartford, Conn., recently announced advancements of two employees to sales managerial posts. John J. Barile is now sales manager in the company's Cincinnati office. Formerly Mr. Barile was the assistant sales manager in the New York office. Robert C. Rose was appointed to this post, replacing Mr. Barile.

Mr. Barile began with Plax in 1946 in the manufacturing department. He transferred to sales office work in 1948, and later, field sales activity, and was a sales representative in the Cincinnati office before he was made assistant sales manager in New York.

Mr. Rose started with Plax in 1950 as supervisor of production scheduling. He moved into sales service in 1954, and had been in field sales service since 1956 before his current appointment.

★

Shulton Art Director

Appointment of Eugene Di Scala as art director of packaging of Shulton, Inc., New York, was announced late last month. He is in charge of packaging design for the company's domestic and international divisions.

Mr. Di Scala joined Shulton in 1957 as an artist. Before that he had been assistant artist and designer for Shell Oil Co.

Inland Names Browar

Inland Steel Container Co., Chicago, drum and pail manufacturing division of Inland Steel Co., recently named S. Robert Browar laboratory director. Mr. Brower is in charge of all chemical research and development of the division.

For the past 18 years, Mr. Browar has done research work with United States Rubber Co., Nalco Chemical Co., Rheem Manufacturing Co., and the chemical corps of the Army.

★

Vulcan Wins Third Award

The tin can division of Vulcan Containers Inc., Bellwood, Ill., has won the Can Manufacturers Institute safety award for the third consecutive time, it was recently announced.

Vern I. McCarthy, Vulcan's president, presented the award to the division in behalf of the Institute. The division makes a variety of cans for chemical specialties.

To qualify for the award, a company must present a year-long record showing no time-loss accidents, and no disabling injuries, regardless of time-loss. Vulcan is one of 210 plants participating in the program.

New line of blow molded polyethylene bottles was announced recently by Celanese Plastics Co., New York. Manufactured by the company's Royal Container Department and known as the "Royal Design Line," the bottles come in three sizes: 12, 22 and 32 ounces. Extended rings are designed to prevent paper labels from slipping. Bottles may also be labeled by decal, offset and silk screen. Spouts feature a "no-drip" lip.

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"Consistent uniformity is one reason we use Knox," says leading household products manufacturer

"Uniformity of size, along with strength and quality, make up the three essential elements we demand in our glass bottles," says the Supervisor of Bottling of one of the nation's foremost manufacturers of liquid household cleaners and other consumer products.*

"Knox Glass, Inc., has been furnishing us this high caliber glass for a period of twelve years now, and its breakage rate, as it goes through the various steps of unloading, conveyor transportation, filling, capping, labeling, case packing, and shipping is so low as to be negligible, actually amounting to less than 1%.

"But consistent manufacturing to our exact specifications is probably the thing we stress most. The wrong-sized bottle — any deviation from specs — can play havoc with our production lines. Knox uses our molds and has, evidently, mastered the art of obtaining proper glass distribution — we have neither breakage nor size problems with their bottles."

Find out how the new/Knox Glass can serve you — consistently. Contact Knox Glass, Inc., Knox, Pa., or any one of 37 sales offices.

*Name available on request.

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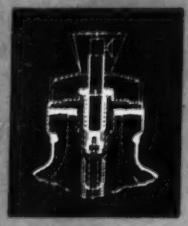
RISDON

Valves

The Risdon MAGNA-METER Valve

A large capacity metering valve for dispensing pre-measured amounts from fractional to multiple cc quantities in spray, liquid or foam form.



The Risdon METERED SPRAY Valve

Delivers a pre-measured spray of duration determined by packager. Actuator must be released and pressed again for subsequent measured spray.

The Risdon GB Valve

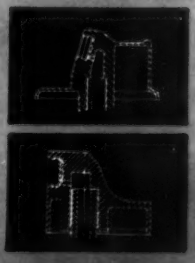
A non-metallic valve for glass, plastic and small metal containers. No spring. No metal in contact with contents. No danger of corrosion or contamination.

The Risdon 5210 Valve

For metal containers. One basic valve — five models with special actuator to suit specific function. Suitable for both refrigeration and pressure filling.

The Risdon MICRO-MIST Valve

Any Risdon valve becomes a "Micro-Mist" valve when fitted with Risdon's patented Micro-Mist mechanical break-up actuator. Enables valve to dispense 3-phase products or give super-spray performance on 2-phase and ultra-low pressure products. Increases formulation latitude and economy.



- Dispense an extensive variety of formulations including propellant emulsions or dispersions • certain types of powders • water-base products • 2-phase, 3-phase & ultra-low pressure products.
- Dispense products in spray, liquid or foam form.
- Applied to glass, plastic and metal containers.
- Dispense pre-measured dosages or unmeasured amounts.
- Available with special applicator-actuators to suit the product.

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Valves shown are covered by Patents or Patents Pend.

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Aerosol Division

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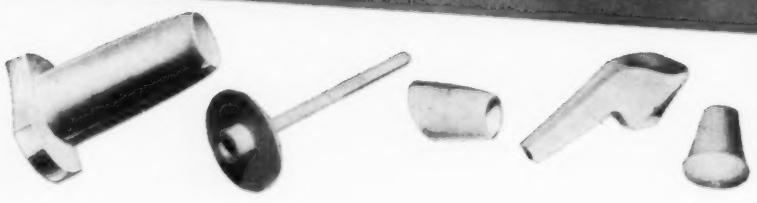


Risdon valves can be fitted with special actuator-applicators such as shown.

new trade marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany each notice of opposition.

Spring Rain — This for water softening product. Filed Nov. 23, 1959 by Tidy House Products Co., Shenandoah, Ia. Claims use since Oct. 7, 1959.

Winter Safe — This for antifreeze. Filed Dec. 16, 1959 by Army and Air Force Exchange Service, New York. Claims use since on or about Aug. 10, 1959.

Jamal Milkwave — This for shampoos, etc. containing milk or cream extract of milk. Filed Feb. 20, 1959 by Sales Affiliates Ltd., Boreham Wood, England. Claims priority under Brit. reg. No. 784,087, Nov. 18, 1958.

Adisco — This for paint brush cleaner, conditioner and preserver. Filed Sept. 28, 1959 by American Dispersoids Inc., White Plains, N. Y. Claims use since Aug. 7, 1959.

Bru-Spra — This for chemical cleaner for use in lines, tanks, etc. in the fermentation industries. Filed Oct. 1, 1959 by Diversey Corp., Chicago. Claims use since Oct. 31, 1958.

Parsons' — This for ammonia-detergent compositions used for cleaning purposes. Filed Oct. 26, 1959 by Parsons Ammonia Co., Clifton, N. J. Claims use since 1876.

Undi Glo — This for cold water laundering soap. Filed Nov. 9, 1959 by Dumas Milner Corp., Jackson, Miss. Claims use since Oct. 7, 1959.

Gay Touch — This for hair shampoo, etc. Filed Dec. 30, 1959 by Helene Curtis Industries, Inc., Chicago. Claims use since on or about Dec. 2, 1959.

Washall — This for all purpose detergent for general cleaning and washing uses. Filed Nov. 10, 1959 by Gamlen Chemical Co., South San Francisco, Calif. Claims use since Sept. 3, 1959.

Stave—This for spot and stain remover in powder and liquid form and for liquid detergent for use on carpets, rugs, and upholstery. Filed Nov. 18, 1959 by Stave, Inc., Tulsa, Okla. Claims use since May 25, 1959.

Dylon — This for nonsaponaceous cleaning preparations for use on clothing. Filed Nov. 23, 1959 by Mayborn Products, Ltd., London, England. Owner of British registration mark dated Oct. 6, 1952.

Quit — This for clothing spot remover in pressurized containers. Filed Nov. 24, 1959 by Aerosol Corp. of America, Wellesley Hills, Mass. Claims use since Nov. 6, 1959.

Rayve — This for hair shampoo. Filed Nov. 27, 1959 by Gillette Co., doing business as Toni Co., Boston. Claims use since April 22, 1958.

Arugol — This for corrosion inhibitors. Filed May 14, 1958 by Geigy Chemical Corp., Ardsley, N. Y. Claims use since Apr. 22, 1959.

Vlr — This for diluent for insecticide and pesticide dusts. Filed June 18, 1959 by C. K. Williams Co., East St. Louis, Ill. Claims use since May 13, 1959.

Bard-Parker — This for germicides. Filed July 28, 1959 by Bard-Parker Co., Danbury, Conn. Claims use since 1929.

N! O! — This for aerosol spray composition used as a matting repellent for dogs. Filed Aug. 14, 1959 by Airkem, Inc., New York. Claims use since July 27, 1959.

Pool + Aid — This for algaecide and sanitizer in liquid or powdered form for swimming pools and general water sanitation. Filed Aug. 21, 1959 by Coastal Chemical Corp., Garfield, N. J. Claims use since Apr. 1, 1957.

Die Roach — This for roach insecticide. Filed Sept. 21, 1959 by Triangle Chemical Co., Macon, Ga. Claims use since Apr. 15, 1959.

Pleasant Valley — This for air freshener. Filed Feb. 6, 1960 by Eastern States Farmers' Exchange, Inc., West Springfield, Mass. Claims use since Mar. 5, 1959.

Silikil — This for insecticide. Filed Feb. 18, 1960 by United-Heckathorn, Richmond, Calif. Claims use since Aug. 31, 1959.

Cebond — This for industrial maintenance coating. Filed Jan. 5, 1960 by Perry-Austen Manufacturing Co., Inc., Staten Island, N. Y. Claims use since Nov. 19, 1959.

Suprema — This for pesticidal applicators — namely, sprayers and parts thereof. Filed Jan. 25, 1960 by H. D. Manufacturing Co., Chicago. Claims use since Sept. 23, 1959.

Redyzit — This for composition for cleaning and preparing a surface to be covered with a protective and/or decorative coating. Filed Aug. 26, 1959 by De Mert & Dougherty, Inc., Chicago. Claims use since July 24, 1959.

Perflex — This for household detergent. Filed Dec. 16, 1959 by Rapp-Ramsey Co., Shenandoah, Ia. Claims use since June 21, 1951; June 22, 1937 on a dry cleaning preparation for cleaning fabrics and painted and varnished surfaces.

Kloro-Kol — This for powdered detergent especially adapted for machine dishwashing. Filed Jan. 6, 1960 by DuBois Co., Cincinnati. Claims use since Aug. 26, 1953.

Handisan — This for cleaning compound intended primarily for use as a hand cleanser. Filed Jan. 7, 1960 by Turco Products, Inc., Wilmington, Calif. Claims use since Aug. 21, 1939.

Glamorene — This for oven cleaner. Filed Jan. 20, 1960 by Jerclaydon, Inc., Clifton, N. J. Claims use since May 5, 1959.

Kutol — This for soap dispensers. Filed Aug. 10, 1959 by Kutol Products Co., Cincinnati. Claims use since 1936.

J-Wax — This for wax containing cleaning, polishing, and protective coating materials in paste, liquid, or aerosol form for finished and unfinished surfaces of all kinds. Filed June 9, 1958 by S. C. Johnson & Son, Racine, Wis. Claims use since Nov. 4, 1955.

Oxford — This for metal polish. Filed Feb. 3, 1960 by New Jersey Chemical Co., Lyndhurst, N. J. Claims use since 1908.

HS — This for insecticide. Filed Oct. 31, 1958 by Aeron, Inc., New York. Claims use since Oct. 6, 1958.

Fenac — This for herbicides. Filed Oct. 12, 1959 by Hooker Chemical Corp., Niagara Falls. Claims use since Dec. 11, 1958.

Hairmone — This for polyvinylpyrrolidone incorporated as a curling agent in a hair cream. Filed Aug. 3, 1959 by Quality Chemists, Inc., St. Louis. Claims use since Apr. 6, 1959.

Citation — This for after shave lotion. Filed Nov. 25, 1959 by Mennen Co., Morris Township, N. J. Claims use since Oct. 1, 1959.

Ajem — This for industrial and domestic washing and cleaning compounds. Filed Oct. 23, 1959 by Ajem Laboratories, Livonia, Mich. Claims use since May 1952.

Blitz-A-Line — This for chemical paint remover for use in removing painted traffic strips from asphalt and concrete pavements. Filed Jan. 4, 1960 by Fiberaised Bar & Line Co., Sausalito, Calif. Claims use since Jan. 7, 1959.

See-Sharp — This for eyeglass cleaners. Filed Jan. 11, 1960 by Louise Wright, doing business at McDermott Sales Co., Evanston, Ill. Claims use since June 1955.

Aerosol Awards...

The ninth annual AEROSOL PACKAGE CONTEST will be held in conjunction with the 47th Annual Meeting of the

CHEMICAL SPECIALTIES MANUFACTRERS ASSOCIATION

HOLLYWOOD BEACH HOTEL, HOLLYWOOD, FLA.
DECEMBER 5-8, 1960

. . . will include judging and selecting of best aerosol packages of the year

The aerosol package competition and awards will be divided into fifteen classes as follows:

1. Automotive products.
2. Insecticides, repellents, moth proofers.
3. Room deodorants.
4. Paints, enamels, other protective coatings; paint remover.
5. Other household products — polishes, glass cleaner, rug shampoo, water repellent, snow, etc.
6. Shave products.
7. Hair preparations.
8. Perfumes, colognes, toilet waters.
9. Other personal products — shampoo, body deodorants, dentifrices, sun tan oil, etc.
10. Food products.
11. Horticultural products.
12. Medicinal and pharmaceutical products.
13. Veterinary and pet products.
14. Industrial products — lubricants, belt dressings, stencil inks, etc.
15. Foreign products.

. . . a top award for "best in the show" will also be made

Rules of the contest:

1. Awards will be made on the basis of general sales appeal of the complete package. The awards are given for package design only and do not constitute endorsement of the product, container, valve, label, or other part of the package, nor do they constitute a determination that the package or labeling meets applicable state or federal laws or regulations.

2. All entries must be made in the name of the brand owner or marketer. Products must have been freely offered for sale prior to September 1, 1960.

3. Entries will close October 15, 1960. All entries should be sent as soon after September 1 as possible to the Committee at the CSMA office, and should comprise one completely assembled empty container with attached tag showing (a) name and address of brand owner; (b) class in which entry is made by number noted above. Send one completed entry blank for each package entered. (Entry blanks will be sent promptly to anyone on request.)

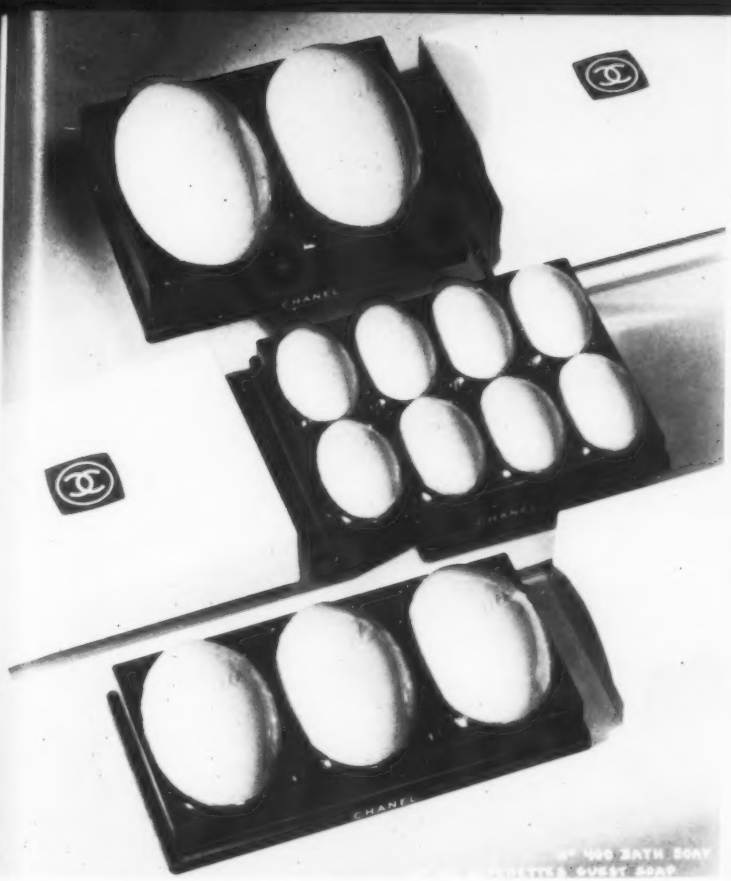
4. Entries may be made in as many classes as desired by the same marketer or brand owner.

5. Entries are open to any brand owner anywhere and are not restricted to members of CSMA. There are no entry fees or other charges to entrants. The committee reserves the right to reclassify any entry prior to judging and to reject any entry it deems advisable.

6. Best packages will be selected in fifteen classes noted above and a "best package in the show" will be chosen. Judging will be by a group of qualified persons. Their decisions will be final.

For information and entry blanks, write to
AEROSOL PACKAGE AWARDS COMMITTEE
Chemical Specialties Manufacturers Association
50 East 41st St., New York 17, N. Y.

MAKE PLANS FOR YOUR ENTRIES NOW!



New packaging for hard-milled soap scented with "Chanel No. 5" perfume is now being marketed by Chanel, Inc., New York. Soap bars are set into a black tray with a white plastic top on which there is a gold "Chanel" monogram. Each oval bar is wrapped in cellophane. Three sizes are available: bath, two to a box; hand, three per box, and saponettes-guest, eight per box, at $5.00, $4.50, and $4.00, respectively.

"Lemonee-8", new general disinfectant, cleaner and deodorizer with a lemon scent was introduced last month by Harley Soap Co., Philadelphia. The container is directly lithographed in yellow and black. "Lemonee-8" has "stepped-up" disinfectant powers effective against 'staph' germs, eliminates stale odors, and is for general cleaning. It comes in one-gallon jugs, five, 15, 30, and 55-gallon drums.

WHAT'S NEW?

A purse-sized aerosol hair spray, "Fashionette" was just introduced by Aerosol Corp. of the South, Arlington, Tenn. The three-inch container is "made possible by a super-concentrated hair spray formula," and holds 200 metered sprays. The container is iridescent lavender, imprinted in white, with a white cap, and is designed as an attractive evening accessory.

Barton Manufacturing Co., St. Louis, is now using a "twist open" metal container for its "Dynashine" shoe polishes and saddle soap. The container is tradenamed "Amerseal" and is supplied by Anchor Hocking Glass Corp., Lancaster, O. The new closure requires no coin or other mechanical means to open it, a quarter turn removes or reseals it. New lithography on the cap is color-keyed to the contents except blue-and-white used for neutral polish. Cans can be stacked because a raised panel on the top fits into a recessed base.

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WITH SHAMPOO PLUS EGG
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Helene Curtis
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Helene Curtis
shampoo
plus egg
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RESORTS
Why Travel Alone?
JAMAICA
COLOMBIA
TRAVEL-KIT
Jean Nate
friction pour le bain
AFTER BATH LOTION

LUX

CAPTIONS: FACING PAGE

A special, summertime package, containing "Shampoo Plus Egg" and "Creme Rinse," of Helene Curtis, Chicago, is now being offered for a limited time. Turquoise package, with gold and white accents, contains dollar size bottle of shampoo plus 29-cent size creme rinse, both for the price of shampoo alone.

Boyer Chemical Co., Evanston, Ill., recently added "Boyer Instant Drain Pipe Solvent" (inset) to its line of household chemical specialties. A new formulation based on potassium compounds is claimed to be odorless and fumeless, as well as more active chemically against drain-clogging hair, grease, and soap. "Instant Drain Pipe Solvent" is packaged in a silver, white, and rust 14-ounce can with easy-opening plastic top.

"8 x 4 Spray" believed to be the first aerosol spray deodorant small and light enough to be carried in a handbag, is now available in Europe. Manufactured by Doetsch, Gretner & Cie, Basel, Switzerland, the new product is packaged in an aluminum container slightly larger than a lipstick case. The aerosol utilizes a glass bottle "Micro-Mist" valve manufactured by Solfrene, S. p. A., Milan, Italian and German licensee of Risdon Manufacturing Co., Naugatuck, Conn. The cap is white plastic, while the container is silk-screened in white and coral with olive green imprinting.

A travel kit of white plastic with a black all-over "JN" monogram containing "Hand Soap" and "Friction pour le Bain" lotion is being offered now by Jean Nate, Inc., New York. Plastic bag is washable and is designed for travelers. Bar of soap is wrapped in a plastic envelope to protect against wetness. Lotion comes in a four-ounce plastic bottle. Both soap and lotion are scented with the same lime fragrance. Kit is available for $1.75 plus tax.

"Pink Lotion Lux Liquid," manufactured by Lever Brothers Co., New York, is now packaged in a no-drip, squeeze plastic bottle. The cap comes with a small spout that is cut off with scissors or kitchen knife. One squeeze of the bottle then yields enough suds for a full load of dishes. If preferred, the cap can be used as a measure in the usual way. A special label draws attention to the no-drip squeeze dispenser. Sizes available are: regular, 12 ounces; economy, one pint and six ounces; and giant, one quart.

CAPTIONS: THIS PAGE

Fels & Co., Philadelphia, have just introduced a new all-purpose detergent cleaner tradenamed "Fels Naptha." Pint and quart glass containers are supplied by Anchor Hocking Glass Corp., Lancaster, O., and are made with a "pinch waist" for easy gripping and handling. Lithographed screw caps, in red, with white price spot, are by Phoenix Metal Cap Co., Chicago. Wrap-around labels, printed in green and red on white paper, are manufactured by the Fitzhugh Division of New Haven Board and Carton Co., New York.

"Air-Care," aerosol room deodorant and sanitizer, is now being marketed by the O-Cedar division of American-Marietta Co., Chicago. O-Cedar notes that the deodorant has both sanitizing and bacteriostatic qualities, thus reducing air-borne bacteria and checking the possibility of infection. As a bacteriostatic deodorizer, spray is claimed to stop development of odor-forming bacteria and fungi, mold and mildew when sprayed on basement walls. "Air-Care" is available in 14-ounce lithographed spray cans, with a white cap.

New concentrated disinfectant-detergent, deodorizer and descaler, "Futron 25," is being made by Hysan Products Co., Chicago. Hysan claims that the product is not only non-toxic, non-inflammable, and non-corrosive, but that it is effective against bacteria at dilutions of one part to 500 parts water. Hysan says that "Futron 25" may be used as a fungicidal agent against athlete's foot. Package sizes available are: in cases of four gallons each, five-gallon pails, 30 and 55-gallon drums.

"Living Curl" hair spray made by Revlon, Inc., New York, is now being packaged in purse-sized aluminum "Peerasol" aerosol containers manufactured by Peerless Tube Co., Bloomfield, N. J. The one and one-quarter ounce container is of one-piece, extruded construction, with plastic enclosed valve and "break-up button" by VCA, Inc., Bridgeport, Conn., assuring a minimum of 50 sprays. Seamless construction yields a container strength of approximately 450 psi. The containers for each of the three types of Revlon sprays, normal, hard-to-hold, and tinted or bleached are two-color lithographed over a white base coat, have gold caps, and retail at $1.00 each.

OUR ROOTS ARE DEEP, OUR AIM IS HIGH

but Valves don't grow on trees

Some fifteen years ago, the aerosol industry was born. Shortly after, the Precision Valve Corporation began. As the industry grew, Precision did too, in research, in discovery, in development.

Today, with over 500 employees and more than 60,000 square feet of manufacturing space devoted to over 10,000 different combinations of specifications for aerosol valves, Precision works with the industry to create and develop new aerosol designs to improve current procedures.

Now, on the threshold of further expansion, Precision rededicates itself to serving the aerosol industry and its customers. A major portion of Precision's new plant program will be directed toward research and development; its modern production facilities further improved; its friendly hand extended and dedicated to helping everyone.

Yes, Precision's roots are deep . . . its aim high!

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Completely glass enclosed room for filling pharmaceuticals and foods at plant of John C. Stalfort & Sons in Baltimore. All equipment in sanitary room is of stainless steel. Line is shorter than all but that recently installed for filling midget cosmetic line.

The Filler's Role in

PHARMACEUTICAL AEROSOLS

By A. P. Mason and J. W. Hart*,
John C. Stalfort & Sons, Inc.,
Baltimore, Md.

AEROSOL pharmaceuticals have arrived! It might be well to study the growth in sales of aerosol pharmaceuticals in order to associate the contract filler with the pharmaceutical industry.

I'm sure that there are many pharmaceutical makers who have watched aerosols from their beginning. They took note and observed the amazing development of aerosols. They saw small sales of aerosols snowball into their present volume in excess of 600 million units a year. Many of these companies saw the potentialities and the advantages of having their products aerosolized. But in spite of the foresight exercised by the management of aerosol loaders and marketers, a great deal of the credit for the success of pressure packaging must go to the CSMA and its members.

Just as the pharmaceutical manufacturer kept his eye on aerosol growth and development, aerosol fillers stared back. They saw a great potential for pharmaceutical aerosols lying dormant and decided to do something about it. One step was a pharmaceutical aerosol symposium held at the Philadelphia College of Pharmacy and Science. The symposium was well attended and certainly accomplished its purpose. It stimulated a great deal of interest between these two fields. As a matter of fact, the symposium might be said to have marked the beginning of the association of the giant pharmaceutical industry with the infant aerosol field. This association has grown to the point where today it may be described as having reached its "early manhood." Certainly it is young, and as it matures it will learn many things. The important thing is that it is young and enthusiastic.

But how did this relationship progress from its infancy to its present state of development? There are many reasons, and I don't mean to overlook any one of them, but, in our opinion, this was accomplished by the aerosol filler. His aggressiveness, and I might add humility, sent him to the doors of

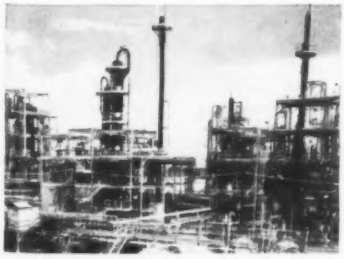
* Paper presented during 46th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 17, 1960. Mr. Mason is director of the Stalfort Pressure-Pak aerosol laboratory, and Mr. Hart is director of new products.

*General Chemical announces a new genetron®

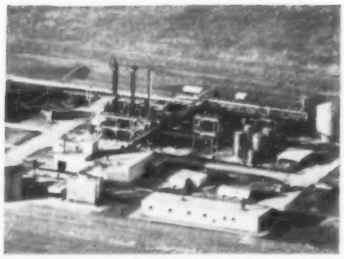
Soon aerosol marketers and contract fillers on the east coast will be "next door" to a large new source of "Genetron" propellants. General Chemical has started construction of new "Genetron" manufacturing facilities at its Elizabeth, N. J. Works. This will be the third "Genetron" plant, supplementing those in Baton Rouge, Louisiana, and Danville, Illinois, and increasing our over-all production capacity by more than one third. This new "Genetron" plant is another example of General's efforts to serve the growing needs of the aerosol industry and will reflect the advanced manufacturing and quality control techniques which have grown from General Chemical's leadership in fluorine chemistry.

For full information about "Genetron" propellants and General's many free technical and marketing services, phone or write the General Chemical office nearest you.

plant in Elizabeth, N. J.



BATON ROUGE, LA. — From this giant fluorochemical center at Baton Rouge, shipments of "Genetron" propellants speed to customers and to General's bulk storage stations for "Genetron" propellants throughout the nation.



DANVILLE, ILL. — General Chemical's Danville plant assures Midwest users of a dependable supply of "Genetron" propellants. This plant also backs up supply to General Chemical's coast-to-coast network of stock points.

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the pharmaceutical companies. He knocked meekly and, much to his surprise, was invited to enter. He presented his case, which is very simple: "I can't fill pharmaceutical aerosols without your help, and you can't fill them without mine."

At this point, we might mention that aerosolizing pharmaceutical products is not a mere gimmick, but rather a must. The advantages of longer shelf life, accomplished by a relatively air-tight package which insures freedom from contamination are very good selling points. Those of us who have used pharmaceuticals in pressure packages are aware of this. How many times have we given vitamin syrup to our children, each time letting more air into the bottle, and frequently having difficulty in replacing the cap because of crystallized sugar. In addition, the aerosol vitamin package avoids the possibility of contamination that might be present on a dropper used to dispense a liquid vitamin preparation.

Few people have the stomach to spread a burn ointment on a 1st or 2nd degree burn. In dermatological applications we sometimes do more harm than good by spreading ointments over unaffected areas near the periphery of the infected area. For such applications the advantages of aerosol products are clear. Not the least of which is ease of application. Besides, the quicker action of aerosolized medicinals is another benefit from the therapeutic standpoint. There are other areas, inside the body cavity, which are virtually inaccessible to application of drops, brushes, swabs, etc. For these, the aerosol is indispensable.

Undoubtedly, pharmaceutical makers know better than we that the aerosol has many other uses in their field. I'm sure these are being researched and developed at this very moment.

In dealing with pharmaceutical manufacturers, many of whom are prone to be skeptical of other industries, it is important to develop confidence. The filler must convince the pharmaceutical firm that not only have aerosols come of age, but so has the loader.

Co-authors John W. Hart, left, and Alfred P. Mason shown in conference room at Pressure-Pak plant of John C. Stalfort & Sons, Inc., 92-year-old Baltimore contract packager and private label aerosol loading firm.

The filler is in a position to process the pharmaceutical product with the same quality and conscientiousness that the pharmaceutical maker employs in his plant.

The aerosol loader is not interested in packing a product in a pressure package just because it's considered a new "gimmick." The product must be shown to have practical and therapeutic value. Although it is sometimes overlooked, the CSMA is keenly aware of the dangers of producing aerosols that really have no value. As a matter of fact, one of the functions of this organization is to help individual members in their attempts to produce good products so that public confidence in them is built up rather than destroyed.

The filler or loader may go to the pharmaceutical company with certain products he has developed, but these are only meant to stimulate interest. The filler would prefer that the potential customer take the idea and expound on it, and thereby adopt it as his own. Once the seeds have been planted, the development group in the pharmaceutical company begins to work on the product idea. This development work is done in conjunction with the filler. In essence, we are saying "here's an idea, what do you think? We think this is a good approach, but naturally you know more about it than we do." We can supply information regarding the propellant. We can tell the pharmaceutical firm about solubilities, compatibilities and various other aspects concerning the blending of the concentrate and propellant. We can also work on the discharge rate, the amount of active ingredients deposited, the rate of their deposit and various other aspects of the valve and formula combination. The filler can also provide such services as oven testing or shelf life determination of the formula.

While all these things are going on between the filler's technical staff and the pharmaceutical staff, a very important thing is taking place unbeknownst to the participating parties. What could be so important, and yet those participating do not even know it is taking place? You may call it a sixth sense or a fourth dimension. Actually it is familiarization. Yes, one of the most important keys in any successful undertaking is getting acquainted. Although a road map is a big help to you in a strange territory, it is far better to have someone with you who knows the way. Once you have

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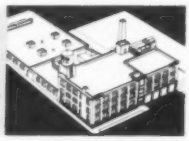

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been there, you are acquainted with it. The more you travel the road the better you know it.

Let us assume we have a product, that it serves a need and that there is a market for it. Our next step in this cooperative effort is how can we control it. This enhances many of the things mentioned above, and you will note they are more or less subjective, that is, confidence, experience or know how, familiarization, etc. But what can be done objectively to protect the integrity of the product. Before we do anything – we must make sure that this concentrate is no more, no less than what we planned.

Mixing procedures are studied, incoming ingredients for this concentrate are thoroughly examined, brief but exact tests are set up to insure the quality of those ingredients. A mixing procedure is introduced which incorporates checks and double checks to avoid any mistakes. Again, this is all a cooperative effort. The next step is to set up a suitable control or test to determine if our concentrate meets specifications. This is done in many ways, but usually it is set up by the pharmaceutical people. Generally, a relatively fast, accurate method is employed to determine the assay of certain ingredients both quantitatively and qualitatively. In this, as in many other phases of the work, the filler is beholden to the customer. The customer considers what equipment is available for the filler to do this testing, and a suitable procedure is developed using this equipment.

(To be continued)

pressure packaging

Aerosols Safer in Planes than in the Home

THE following statement intended to clarify the status of aerosol products in planes flown at high altitudes was issued recently by the Chemical Specialties Manufacturers Assn. The statement, which offers scientific reasons why aerosols at high altitudes are no more of a hazard than in the home, answers a fear expressed by an airlines plane captain that 'pilots were concerned about the explosion hazard of pressure-packed aerosol products.' The captain mentioned this fear during a Congressional Hearing earlier this year investigating commercial aircraft crashes. The full text of the CSMA's statement follows:

"At the Congressional Hearings in January, 1960, investigating commercial aircraft crashes, it was stated by a plane captain that pilots were concerned about the explosion hazard of pressure-packed aerosol products. From a knowledge of the physical characteristics of the components of typical aerosol products it is extremely difficult to visualize any circumstances existing in an aircraft, in flight, which would make an aerosol container any more hazardous than in the home.

"The belief that aerosol products become dangerous in flight is probably based on a misconception that the effective pressure inside the container greatly increases because the external pressure, due to altitude, decreases. While an effective pressure increase does occur under these conditions, the magnitude of the increase is, in fact, insignificant.

"An examination of the factors involved should make this readily apparent. At an altitude of 10,000 ft., the pressure inside the nonpressurized cargo space of the plane is about 10 pounds per square inch absolute (psia), or about ⅔ the normal pressure of the atmosphere at sea level. The latter value is consistently within a fraction of 15 psia. Any container which has been sealed at sea level pressure and is then subjected to the pressure at 10,000 ft. altitude will have its effective internal pressure increased by 5 psi. Another way of expressing this is that the force exerted against the inside wall of the container has increased by 5 psi because the force exerted by the pressure of the atmosphere on the outside wall has decreased 5 psi. The absolute pressure inside the container has not actually changed. If the initial pressure inside the container at sea level is 50 psia — this is typical of many aerosol products — its effective pressure at 10,000 ft. would again be increased, but still only by 5 psi or 10%.

"Concerning the typical aerosol container whose effective pressure would be increased 5 psi, the question arises—Would this pressure increase be hazardous? Without reservation the answer is negative. Several very sound technical reasons can be given for this lack of concern. First, and most important, is that the bursting strength of even the weakest containers used for aerosol products is about 150 psia. Thus, the pressure must be increased approximately 200% more before the strength of the container is exceeded.

"Another method of demonstrating the safety of aerosol cans under these circumstances is to examine pressure changes with temperature changes. Typical aerosol products show a pressure increase of 2 to 5 psi for every 5°F increase in temperature. If the temperature in the household were to increase from 70°F to 90°F — not an unusual condition for a summer day — an aerosol can under the same conditions would show a pressure increase of 8 to 20 psi, depending upon what the product might be. Of the many hundreds of millions of aerosol cans produced, none has been known to burst under these conditions and certainly many must have been subjected to at least these temperature changes with the resulting pressure changes.

"Even more convincing evidence of the lack of danger in subjecting aerosol containers to high altitudes is the fact that all household and cosmetic aerosol products are required by the Interstate Commerce Commission Regulations to be heated to 130°F before shipment. For practically all aerosol products this temperature treatment results in at least a 100% increase in pressure. Thus, the container, before it is ever sold, has already been tested to a pressure much higher than it could reach as a result of pressure changes due to high altitudes.

"A final factor to be considered is the temperature of the airplane's cargo space at high altitudes. Since this space is not heated, its temperature will be less than ground temperature. This results in an actual lowering of the container pressure. At 10,000 ft. the temperature rarely rises above 50°F and is normally much lower. Even at 50°F, the decrease in pressure in the container resulting from the temperature drop exceeds the effective pressure increase resulting from the altitude change.

"The interesting conclusion to be drawn from these facts is that in practically all cases, an aerosol container is actually safer in the cargo space of an airplane at high altitudes than it is in the home where over ten years of experience and many million containers have demonstrated complete safety."

★

Allied Advances Fedoruk

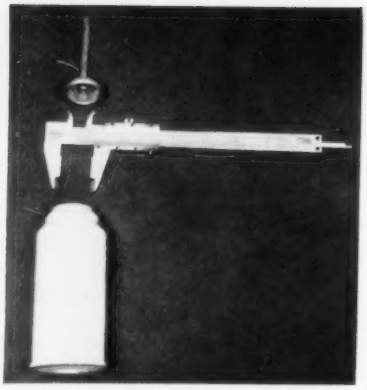
John C. Fedoruk was recently appointed technical director of the General Chemical division of Allied Chemical Corp., New York. Mr. Fedoruk succeeds Howard H. Hurmence, who was named assistant director of research and development for Allied.

The new technical director has been with General Chemical for 19 years, the past six as assistant technical director. Mr. Fedoruk's headquarters are at the General Chemical research laboratory at Morristown, N. J. A major part of the research program is devoted to fluorine chemistry. Other fields include agricultural and industrial chemicals.

John C. Fedoruk

Aerosol Caliper

A new micrometric measuring tool has just become available to the aerosol loader from DeGray Design, Inc., 900-25th Street, West



New aerosol caliper distributed by DeGray.

Palm Beach, Fla. The new aerosol caliper is a modification of the Vernier caliper. Accessible and measurable to 0.001 of an inch by the new instrument are valve dimensions and crimp; crimp location; crimp depth; edge roll; depth of cap; container diameter; height (to six inches); and most other dimensions subject to quality control. The tool can also be used to measure machine adjustments and crimping tool settings.

The caliper is manufactured by Lufkin Rule Co. in Switzerland to DeGray's design. It is distributed by DeGray on an exclusive basis at $48.50 each, postpaid. Made of stainless steel, the instrument comes in a protective wooden case. A detailed description of the caliper and instructions for reading the Vernier rule or scale are available from DeGray.

—★—

Packaging Machinery Show

The 1961 Packaging Machinery Manufacturers Institute show is scheduled for Nov. 7-10 at Detroit's Cobo Hall, it was announced last month. Over 40,000 square feet of space have already been rented by manufacturers of packaging machinery and related products, an amount which equals 62 per cent of the space used in New York's Coliseum during the PMMI show in 1959. About 20,000 buyers from the United States and Canada are expected to attend the exhibition.

Complete information is available from Hanson & Shea, Inc., 1 Gateway Center, Pittsburgh 22.

G. Barr Unveils Automatic Assembly Line

COMPLETE automatic packaging of cologne and perfume in glass aerosol containers has become a reality with the recently completed automatic assembly line installed at G. Barr and Co., Chicago aerosol private label manufacturer.

The installation of the line, which operates at 120 units per minute, fulfills the prediction made by Douglas Atlas, Barr vice-president, that the cosmetic industry would turn more intensely toward aerosol packaging of colognes and perfumes, (approximately 34 million units in 1959), and that the unit volume would grow rapidly.

With the introduction of the new production facilities at G. Barr's Chicago plant, cosmetic manufacturers are assured of meticulous production runs with increased economy. Although intended for high speed production, the assembly line can be controlled for minimum quantity runs. While geared to handle specialized problems such as precise positioning for filling containers with openings as small as 20 millimeters, the line is so designed as to facilitate filling of

Top: New Barr assembly line for automatic packaging of colognes and perfumes in glass bottles. Close-up, right, of line which fills within plus or minus one gram.

Line is equipped with automatic centering devices permitting exact alignment of bottles with filling spouts, even when bottle openings are very small.

One of last stops made on assembly line at Barr plant before packaging of bottles in a variety of display materials is spray booth where products are subjected to sprayability tests.

any aerosol product into glass bottles. Before the introduction of automation, most production of bottle runs was accomplished on a hand or semi-automatic system.

A typical filling operation begins with bulk pre-mixing of product and propellent in stainless steel pressure tanks to insure complete uniformity. Each bottle is automatically cleaned and coded with a control number. Filling is extremely accurate, with filling weights as precise as plus or minus one gram. Specially designed automatic bottle centering devices permit precision alignment of bottle and filling spouts, even when bottle openings are quite small. Every bottle is washed. Magnetic conveyors transport bottles through the leak test bath and air drying tunnels, preparatory to final packaging in a variety of display materials.

According to Mr. Atlas, the development of the automatic assembly line is the result of advanced planning on the part of G. Barr engineers.

—★—

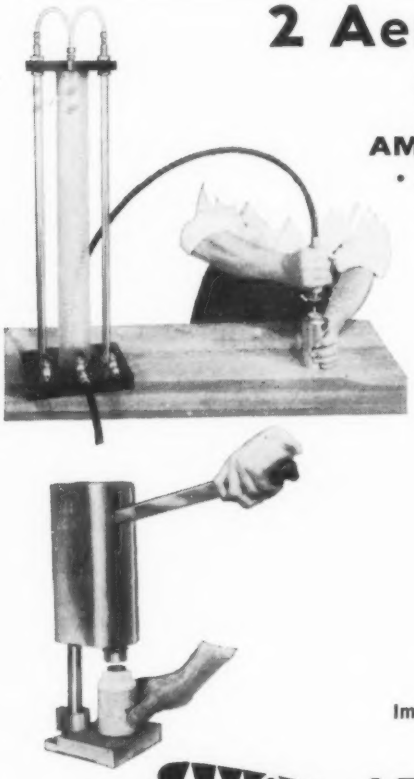
Aerosol Colognes Tested

Twenty-five aerosol colognes were found to be superior to their conventionally packaged counterparts in a study conducted by Consumers Union, independent consumer organization, in the August issue of *Consumer Reports*, the group's monthly publication.

In the opinion of CU's consultants, aerosols—aside from price considerations - offered more advantages than disadvantages. Among the advantages found were: the fragrance produced a better effect when dispensed by aerosol; odor compositions often were better integrated, maintaining their initial identity longer without change; and aerosols did a more effective job of perfuming with the same amount, or less, of odorant, because of the aerosol's fine dispersion. Compared to conventional products, they were found to "minimize" staining.

Studies of the products included evaluation by CU's consultants on the basis of such criteria as odor composition, intensity, character, lasting quality, and balance or composition. A separate study involved submitting more

(*Turn to Page* 171)



2 Aerosol Production Boosters

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AMCO HAND CRIMPER

- Manually operated, short stroke, and multiplied leverage lessen operator fatigue.
- Single stroke action locates can, seats valve in position, and crimps.
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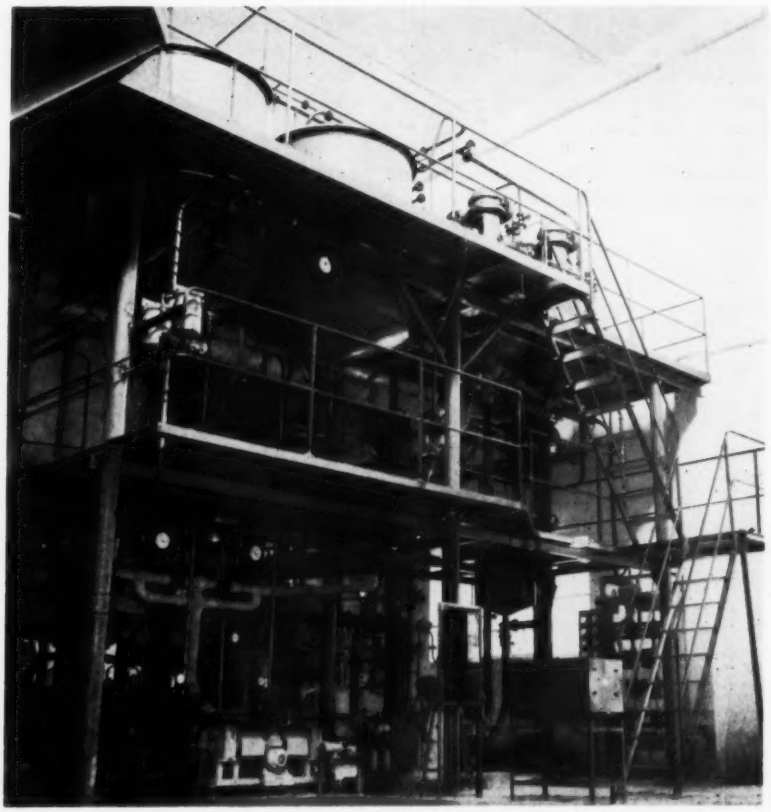
Continuous and Automatic Saponification Plant For Fatty Acids.

Production capacities ranging between 500 and 6,000 Kilograms per hour



General view of the continuous and automatic saponification plant for fatty acids.

Characteristics;

Automatic control of free caustic in soap with an accuracy of ± 0.01 %

Very accurate control of the sodium chloride content in soap from zero to any required value

Maximum percentage of unsaponified saponifiable matter 0.05 %

Utilities required for 1,000 Kgs. of soap 62 — 63 % fatty acids:

Steam at 2-3 Kgs. sq. cm.	:	65-70 Kgs.
Electricity	:	10-12 KWh.
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OUR MANUFACTURING PROGRAM INCLUDES:

Plants for Cooling and Drying all types of soap
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Automatic mixers and automatic soap cutters
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Production...

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Modern Toilet Soap Drying

Soap Plant Observer

New Patents

Bulletins and Equipment

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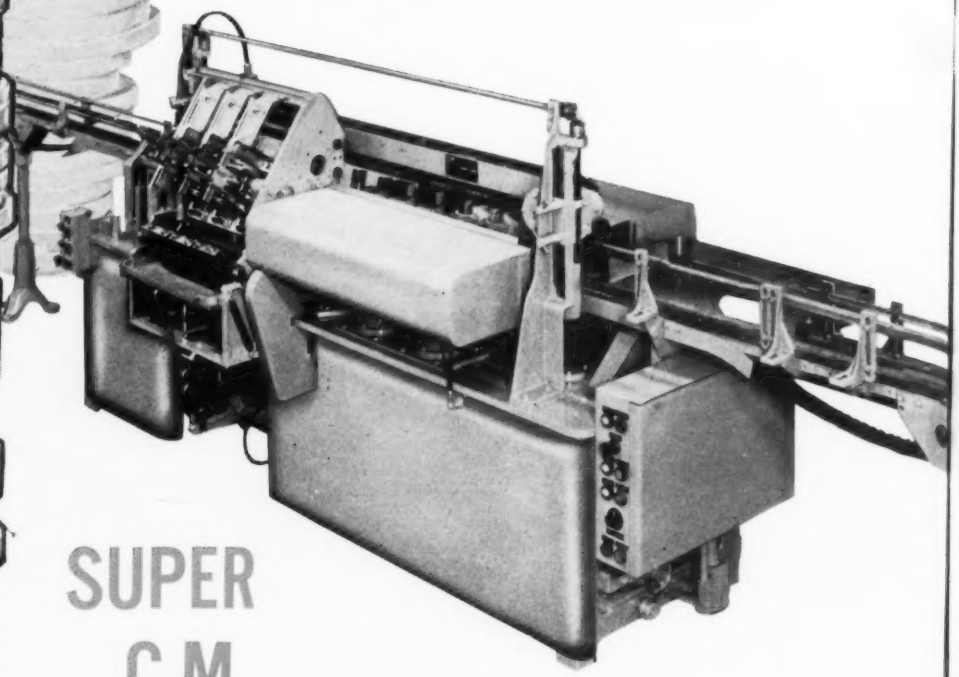

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**Over 150 machines now in actual field operation.*

Modern Toilet Soap Drying

By Heinz Zilske,
MIAG Muehlenbau und Industrie G.m.b.H.
Braunschweig, Germany

Part II

CRYSTALLIZATION phases of dried soap have been copiously discussed and written about in recent years. No clear definition of optimum working conditions for maximum yield of the beta phase is given in the literature. However, the question should not be too difficult to clarify on the basis of investigations reported by Dr. von Stoesser in *Seifen, Oele, Fette, Wachse*, 1959, No. 21, p. 624.

Soap of 63 per cent fatty acid content contains exclusively beta and omega phase at temperatures ranging from 100°C to 20°C., according to American investigators. Foaming power is boosted by the beta phase, whereas predominance of the omega phase depresses sudsing properties. Somewhere between 70° and 80°C is the critical temperature where the omega phase becomes unstable and is converted into the stable beta phase. Rapid chilling from about 100° to 40°C can "freeze" the soap in the omega phase due to increased viscosity and reduced mobility of the molecules. However, even after solidification, transformation into the beta phase can be accomplished by vigorous kneading and milling of such soaps.

From the above observations it may be concluded that all rapidly solidified soaps must contain a major proportion of omega phase. For instance, soaps permitted to solidify on the cooling press are known to be poor lathers, even after prolonged storage and with fatty acid content in excess of 70 per cent.

What does vigorous working achieve in such soaps? It may be assumed that the foam improving beta phase is formed. It would be interesting to establish to what extent this transformation can be accomplished by mechanical working of soap. If complete transformation can be achieved by such treatment, then the entire beta phase theory loses all meaning. Even household soaps, formerly made on cooling rollers and predominantly consisting of "frozen" omega phase, could then be changed completely to beta phase by passage through a modern double extrusion press ("Strangpresse").

Phase Change

Current literature does not report which phase predominates in soap spontaneously chilled from 170° to 40°C. We can hardly assume that a complete transformation from instable omega to stable beta phase is effected during the extremely rapid passage through the critical temperature zone between 70° and 80°C. The phase change must be assumed, at least in this instance, to take place almost exclusively as a result of vigorous amalgamation and working of the solidified soap.

Amalgamation and strong mechanical working of soap has by no means arrived only with the modern vacuum drier. It has long been used with the conveyor band drier. In this process the hot soap which leaves the kettle at 70°C, the critical temperature, is moved over cooling rollers, allowed to solidify and subsequently passed through cooling screw presses.

Temperature Major Factor

Temperature, which is one of the major processing factors, has been left out of all above speculations. According to our observations high sudsing soap is deprived of its foaming power by prolonged working in modern mixing equipment, where temperature is raised rapidly to 50°C. and higher. This phenomenon calls for certain precautions: Soap "noodles" leaving the drier should be shaped so as to offer minimum resistance to vigorous working. All discharge screws on cooling presses and mixing machines should be fitted with cooling jackets to keep temperatures below a certain point.

All available knowledge on the important role of temperature was taken into consideration in engineering the expansion drier. The soap is cooled from 170° to 25°C. in several carefully graduated steps. The initial drop from 170° to 100°C. occurs spontaneously while the mass remains in the liquid state. Further cooling from 100° to the solidification temperature of about 60° is accompanied by constant stirring. Below 60°C. the mass is vigorously worked and kneaded.

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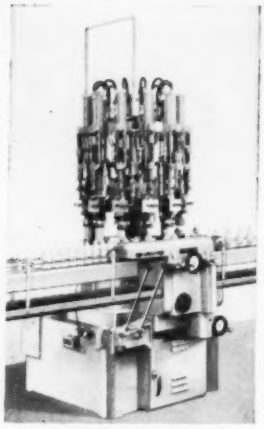
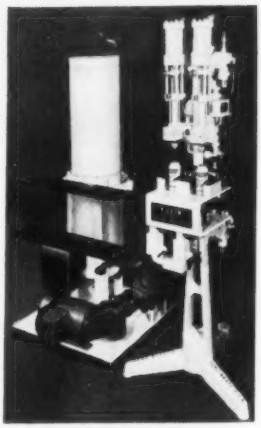
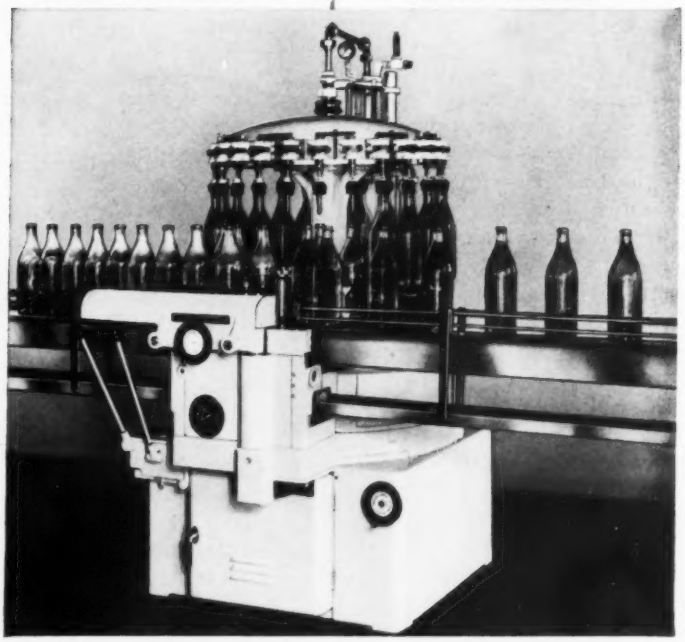


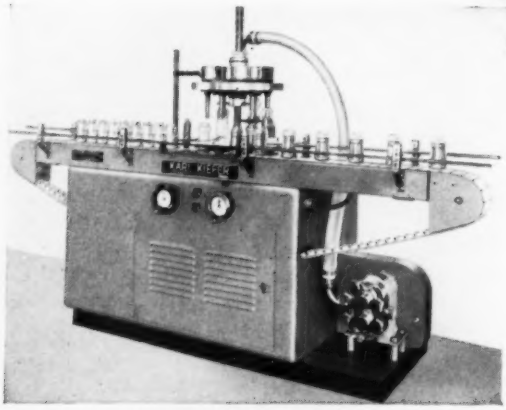
12-STEM GAS-JET AEROSOL CHARGER



2-STEM GAS-JET Jr. AEROSOL CHARGER

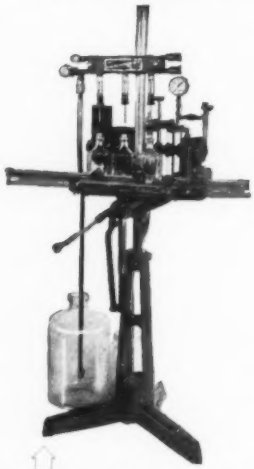


24-STEM ROTARY VACUUM LIQUID FILLING MACHINE



CADET VARI-VISCO for Viscous Products

MONO-PISTON VISCOUS FILLER



CINATI JR. LIQUID FILLER

The Karl Kiefer Machine Co. 923 MARTIN STREET CINCINNATI 2, OHIO

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Temperature limits of each step can be raised or lowered, according to the composition of the charge. Governing consideration must be that the soap should remain liquid after passage through the first step, which is completed in a few seconds. All differences in fatty acid content should be equalized in this stage when the temperature is still high and the omega phase predominates.

The second step involves slow cooling from 100° to 60° and constant stirring and working of the liquid soap to the point of solidification. At this point in the process the now instable omega phase is transformed into the stable beta phase.

Since expansion drying is a continuous process, the soap can be left in the second processing zone for only a limited period. Further cooling is therefore required in a third processing zone, consisting of a cooling screw press or "Votator." Here the mass is once more submitted to simultaneous cooling and kneading action which accomplishes a twofold aim: rapid escape of heat and completion of the change to high foaming beta phase.

Improved Odor Properties

Gradual cooling of the soap mass carries the additional bonus of deodorization. In the process of spontaneously cooling soap to the point of solidification a considerable proportion of malodorous compounds is entrained by the steam into the vapor condenser. A certain proportion, however, is redeposited on the smaller soap particles, because the soap mist formed in spraying acts like a filter. Upon solidification these undesirable compounds are retained by surface active forces on particle surfaces and will subsequently be incorporated into the solid soap mass by mechanical kneading action.

Slow cooling in the expansion drier prevents retention of malodorous substances. Since the soap is still liquid after the initial chilling from 170° to 105°C. the expansion chamber remains under slight excess pressure. Steam carrying undesirable compounds will therefore not condense until later in specially designed vapor condensers. Any malodorous substances bound by surface active forces to small soap particles are removed by stirring of the liquid soap in the lower part of the expansion chamber. Conditions resemble those prevailing in a modern deodorization plant for edible oils.

In one-step cooling and vacuum drying the vapor must be sucked off continuously to maintain the vacuum. A certain percentage of soap dust is inevitably entrained by this operation. This finely particulated soap acts like a sponge tending to absorb substances undesirable in the further processing of the soap. It is reclaimed and remixed with the solidified soap mass.

Entrainment of soap particles with the steam is equally inevitable in the expansion drier. Here, however, they are reclaimed and liquified before leaving the system with the soap stream. Complete deodorization is accomplished by stirring the liquid mass at temperatures above 100°C.

In processing charges composed exclusively of high grade fats the above considerations have no more than theoretical value. This applies to the manufacture of basic chips for toilet soaps, for instance. However, in the manufacture of household soaps the question of deodorization is of the greatest practical importance. Test runs with synthetic detergent/liquid soap mixtures showed equally good results.

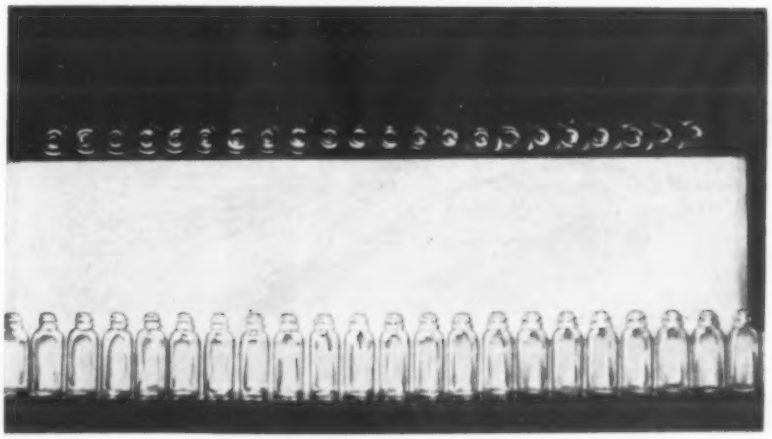
Soap charges mainly composed of distilled fatty acids exhibit an odor, characteristic of distillates, which presents a perfuming problem. In the expansion drier this odor is completely removed and such products can be successfully perfumed with delicate fragrances.

Prior to the emergence of modern soap drying techniques, high grade toilet soaps could be made only from highly purified edible fats, if odor problems were to be avoided.

New Inspection Light

Terriss Division of Consolidated Siphon Supply Co., 22 Wooster St., New York 13, recently introduced an inspection light for the visual inspection of bottles and containers on the production line for breaks, chips, dirt, and fill level. The light makes it possible for the operator to obtain a full view of the bottle or container with all shadows and glares eliminated, the company states. Sodium vapor lights are furnished for semi-opaque brown or amber colored bottles. Lights are available in 18, 36, and 48 inch lengths and processing speeds vary from 60 to 300 units per minute depending upon size of light selected.

New Terriss bottle inspection light



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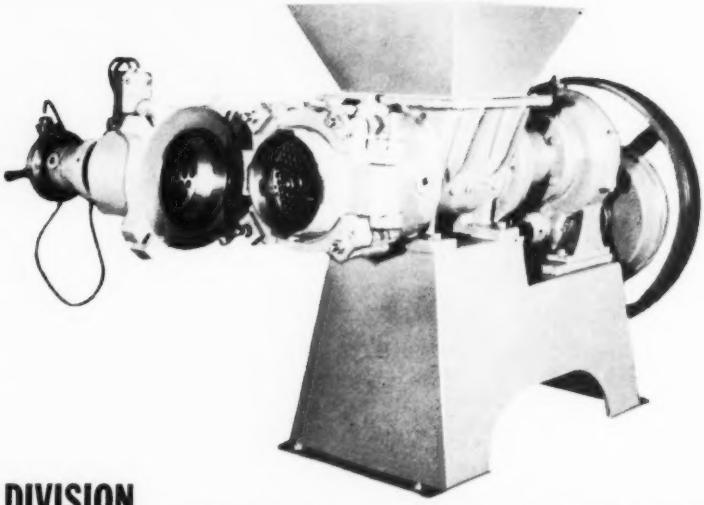

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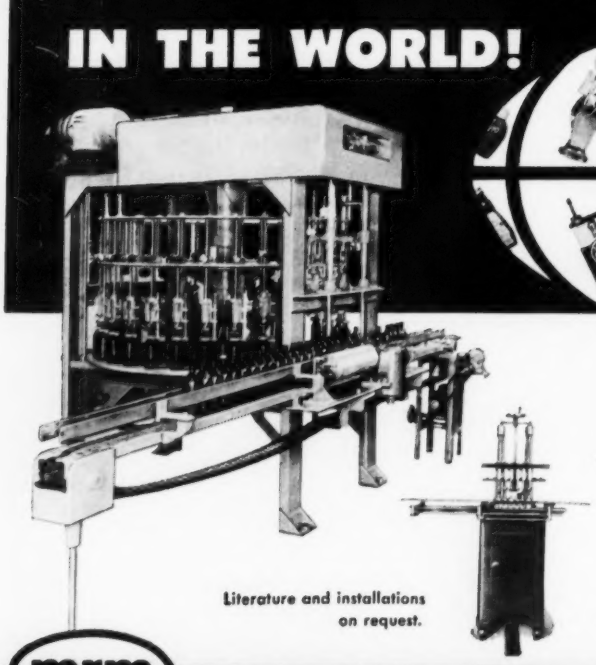

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Manufacturers of filling, labeling and conveying machines

soap plant observer

By Willis J. Beach
Technical Service Department,
Sugar Beet Products Co.

ORAL toxicity to humans of household soaps and detergents is of a low order, but ingestion of these products by children is not infrequent. Such incidents represent four per cent of all cases reported by 100 Poison Control Centers through the National Clearinghouse of the U. S. Public Health Service. About 90 per cent of the accidents involve children under 5 years of age.

The report discusses order of toxicity, manifestations of poisoning and its treatment for the several general types of household soaps and detergents. A few of the report's important features will be reviewed herewith:

Conventional soaps, such as toilet bars, have a low order of toxicity. Packaged detergent granules, light and heavy duty, together with a number of anionic syndets such as the sodium alkyl aryl sulfonates and alkyl sulfates and isethionates all have moderate toxicity. The LD_{50} values in animals range from about 1 gram to 5 grams per kilogram of body weight. Fatty acid amides and non-ionics in general, offer no greater hazard than anionics.

Following ingestion of the above types some gastro-intestinal irritation may occur with vomiting and diarrhea. Treatment includes use of demulcents (e.g. milk) and symptomatic measures for diarrhea if necessary. Because of the low toxicity, emptying of the stomach is probably unnecessary.

According to the report, liquid household detergents, similar in composition to detergent granules, but sold in aqueous or hydro-alcoholic solutions, are less poison-

ous than the powders, providing the alcohol content is low. If appreciable quantities are swallowed, toxic effects will be similar to those expected from detergent granules and treatment should be similar.

The liquid general purpose cleaner containing solubilized petroleum distillates and/or pine oil present a special problem. Aspiration of petroleum distillates, occurring immediately after ingestion or associated with vomiting, may produce a hydrocarbon pneumonitis, although such action has not been reported in the cases submitted to the Clearing House. Pine oil is said to irritate the gastro-intestinal and genito-urinary tracts and to depress the central nervous system. When large quantities of these cleaning agents are swallowed the stomach may be emptied by gastric lavage rather than by vomiting.

Ingestion of detergent granules of the type used in the automatic dishwashers presents a more serious problem. They contain high percentages of alkaline salts of moderate to high pH and, thus, are capable of causing mucous membrane damage. Treatment for ingestion should include *immediate* dilution with considerable amounts of water or milk, neutralization with dilute vinegar or citrus fruit juices, and administration of demulcents such as olive oil. The decision to empty the stomach must be influenced by the amount ingested and the presence or absence of oropharyngeal mucous membrane damage. Vomiting should not be included. The stomach may be lavaged after cautious passage of a small-bore well-oiled tube. Further treatment depends on the extent of tissue damage and the development of local or systemic manifestations. The physician must be alert to the possibility of esophageal, gastric and respiratory tract involvement.

The report also offers a word about ingestion of certain polyphosphates. Although unlikely, the possibility of hypocalcemia exists, resulting from the binding of ionized serum calcium by the polyphosphate anions. The intravenous use of a 10 per cent solution of calcium gluconate is suggested.

The above information from the National Clearinghouse report should be helpful, particularly to the smaller soapers who may be called upon to explain the nature of their products to a physician or a Poison Control Center; and even to offer suggestions in an emergency to a frantic caller.

Every manufacturer of household chemical specialties should submit the latest information on new products to the National Clearinghouse for Poison Control Centers through the Division of Special Health Services, Bureau of State Services, U. S. Department of Health, Education and Welfare, Washington 25, D. C. The author recalls sending several pages of such data to his friend,

Harold Hodge, at the University of Rochester in 1956. This, together with a wealth of like information, formed the basis for a compilation by Dr. Hodge and his associates, M. N. Gleason and R. E. Gosselin, titled: "Clinical Toxicology of Commercial Products," Williams and Wilkins, Baltimore, 1957. This text is suggested as a useful reference.

* * *

In the chemical specialties industry, research programs consist mainly of product development and improvement work. Such programs may embrace raw materials study and even process engineering on the part of the technical staff. Even though the program may be geared to complement the sales objectives, those undertaking so-called research in the smaller firms sometimes wonder what is expected of them under the name of research even as we have defined it. Irving Telling and Warren Berg, writing in *Industrial Research*, point out once again to all that "quality control and technical service to sales or production are necessary. But they are not research."

Many good research and development men have to spend their time and energies on non-research duties and have not a chance to demonstrate to management the pay-off potential of unhampered research, according to these authors. They outline the problem as follows:

"Management can measure the returns only when it has a clear idea of where the effort is being applied and, hence, what kind of return can be expected.

"It is not enough to buy some technology and watch it pay off. If new products are wanted, quality control or technical service won't produce them . . .

"Vital in planning a new product program that can pay off is the effort to be spent outside the laboratory in production preparation, market testing, product modification and market development. Thus it is usual to say that five years will go into product development and two years into market development."

In this area lies much of the failure of new products. The development of a successful marketable product requires that management understands the market.★★

—★—

New Armour Cationics

Availability in pilot plant quantities of a new group of tertiary amines was announced late in July by Armour Industrial Chemical Co., 110 North Wacker Drive, Chicago 6. "Propomeens" are propylene oxide adducts of aliphatic amines prepared by adding propylene oxide to coco amine ("Armeen CD") and hydrogenated tallow amine ("Armeen HTD").

"Propomeens" show promise as dispersants in hydrocarbon systems, defoamers in acid systems and as oil additives, according to Armour. They are suggested for research and development in applications requiring oil soluble amines and cationic surface activity.

HERE'S A MIXER THAT GUARANTEES A CONSTANT UNIFORM MIX.

The MARION MIXER mixes to Laboratory uniformity . . . Consistently through its Exclusive Mixing and Blending Action.

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- INSECTICIDES
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The Marion Mixer is engineered for precision mixing and turns out TOP QUALITY mixed products for chemical manufacturers everywhere. The Marion Mixer is recommended for mixing the Lightest or Heaviest Materials. Its simple, efficient design is rugged enough to handle any volume of mixing large or small . . . and at the same time, it constantly safe-guards your formula mixes from loss of uniformity. Laboratory tests have proven that even trace materials can be blended into the most complicated industrial chemical formulas, and pass individual analysis tests for the most even batch distribution possible.

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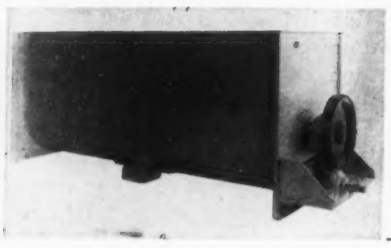

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New Can Closing Machine

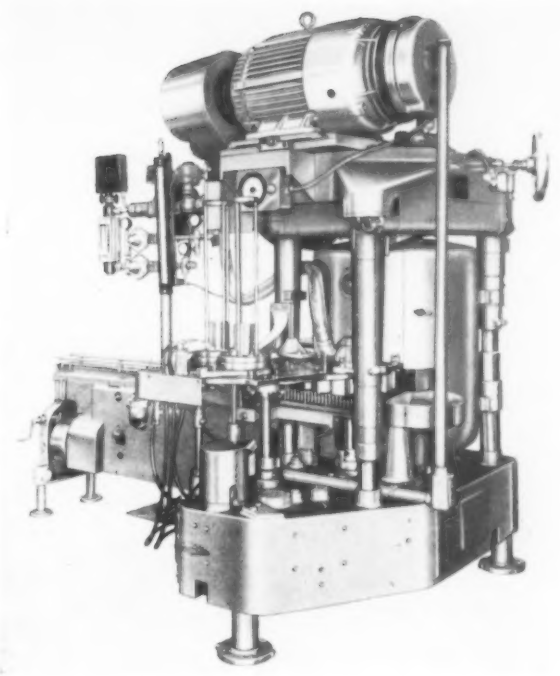
A new, ten station high speed automatic machine for closing round open end cans, less than 3 7/16 inches in diameter, was introduced recently by Continental Can Co., 100 East 42nd Street, New York 17. Designated "449-HCM-2, the machine is capable of speeds up to 1,000 cans per minute depending on can size and product being filled.

Novel feature of the machine are power-driven base plates, which are said to eliminate all possibility of deadheading during double seaming. Other features include straight line feed, dual cover feeds and an interrupted field cover trip. Within limits height changes can be effected simply by turning one crank.

Changeover of the machine for a different can diameter can be made in seven hours, for a new can height in half an hour.

High speed transfer mechanisms for all types of can fillers are available according to Continental. They assure non-spill movement of cans from filler through closing machine.

A four page brochure is available giving detailed data on the equipment.



New, ten-station high speed automatic machine for closing round, open end cans less than 3 7/16ths inches in diameter introduced recently by Continental Can Co., New York.

—★—

Micro Fine Silicas

Commercial availability of micro fine precipitated silicas under the trade name "Quso" has just been announced by Philadelphia Quartz Co., 1156 Public Ledger Building, Philadelphia 6. Suitable for use as insecticides, fillers, anticaking and bulking aids, and absorbents, as well as a number of other applications, these silicas are made by a special process for which patent application has been filed.

The materials come as soft white micro fine particles measuring from nine to 15 millimicrons, offering a surface area of 280 square meters per gram. Two grades are currently available, "Quso F 20" which is slightly acid (pH 6.4) and "Quso G 30," on the alkaline side with pH 8.2. Both types are hydrophilic, insoluble and highly oil absorbent.

Both materials come in multiwall moisture resistant paper bags of 25 pounds net. Prices range from 55 cents per pound for minimum lots of 10,000 pounds to 70 cents for lots of 200 to 575 pounds.

—★—

Griffin-Rutgers Relocates

Griffin-Rutgers, Inc., manufacturer of the "Codedge" label dating and coding machine, have relocated their operations at 14 Harwood Court, Scarsdale, N. Y. They were formerly located at 41 East 42nd St., New York.

—★—

WARF Mouse Control Data

"Mouse Control with Warfarin" is the title of a small four page, two color folder just published by Wisconsin Alumni Research Foundation, Madison, Wis. Intended to provide an easy to read guide for do-it-yourself mouse control in rural and urban areas the folder gives clear and concise instructions supported by appropriate illustrations.

WARF suggests use of the folder by formulators' sales personnel, by distributors, and dealers. It may also be of value as a mailing piece to selected consumers and as a handout to individuals and groups interested in mouse control. For copies contact WARF at P. O. Box 2217, Madison 5.

—★—

Two New Polish Waxes

Two new waxes designed primarily for use in polish formulations were introduced recently by Bareco Wax Co. Division of Petrolite Corp., Tulsa 3, Okla. "Petrolite" C-8500, based on Fischer Tropsch wax, is emulsifiable with very small amounts of oleic acid, thus yielding a hard and tough film, according to the manufacturer.

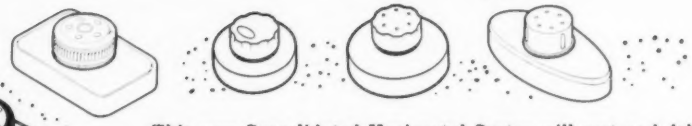
"Petrolite" C-8500 is said to form stable emulsions with solids content up to 30 per cent. Products are said to have good dry bright characteristics and good color stability on aging.

"Petronauba" W is claimed to be the first white oxidized wax designed for polish manufacture. It is derived from high melting point microcrystalline waxes of domestic origin, forms stable emulsions by either wax-to-water or water-to-wax technique, yields dry bright polishes of good color stability on aging, according to Bareco.

Can breasts leave the new Consolidated Horizontal Sorter properly positioned and ready to be fed into a capping machine. Unit includes supply hopper that feeds can breasts to capper.

NOW!

SORT AND DELIVER CAN BREASTS TO CAPPER *automatically*



This new Consolidated Horizontal Sorter will sort and deliver can breasts to an automatic Capem Capping Machine at rates up to 175 per minute! It cuts your unit production costs — and keeps marring of enamel finishes to a minimum.

Square, oval, rectangular or round breasts — the new Consolidated Horizontal Sorter handles them all . . . automatically. Also available is a Consolidated Belt Sorter for handling tapered plastic jigger caps as well as tapered plastic fitments. For high speed sorting, choose the Consolidated Cage Sorter.

Let us help you figure just how fast one of these new machines will pay for itself through savings in your own packaging operations.

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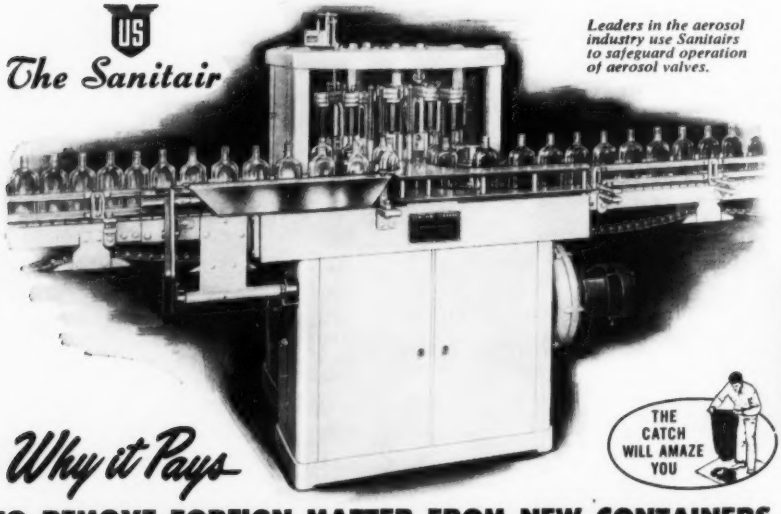
US *The Sanitair*



Leaders in the aerosol industry use Sanitairs to safeguard operation of aerosol valves.

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TO REMOVE FOREIGN MATTER FROM NEW CONTAINERS

Packaging engineers demand it as indispensable to quality control. Merchandising managers demand clean containers for profitable consumer relations!

Air-Cleaning costs so little . . . the lack of it can cost so much. Once a Sanitair is synchronized into the production line, its operation is entirely automatic. Containers are completely inverted, *before, during* and *after* the air tubes enter, assuring positive cleaning. Has automatic operating safeguards. Speed is adjustable to line operation. Container changeover for all sizes including wide-mouth finishes. Exclusive, patented features. For complete details, write for the "Sanitair Bulletin."

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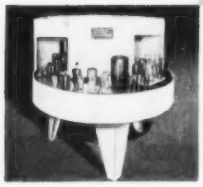
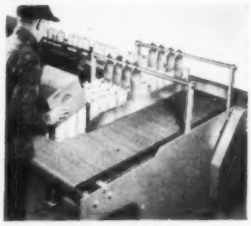
The E-Z Air Cleaner

for semi-automatic air cleaning of new containers of any size or type. Containers are manually inverted over air valves, two at a time, up to 40 per minute. Write for the "E-Z Bulletin."



For rinsing bottles or jars, ounces to gallons as illustrated. Rinses both inside and outside with water or steam. Write for the "Rotary Rinser Bulletin."



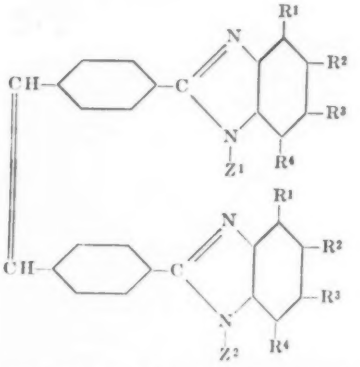
To Feed Containers Faster

THE U. S. CONTAINER FEEDER feeds containers to the packaging line faster, easier, at a steadier pace and a lot cheaper! Just dump 'em on, and let the feeder take charge. Pays for itself quickly and reduces costs permanently. Write for a "Container Feeder Bulletin."

new patents

Listed below are brief abstracts of recently issued patents. Complete copies may be obtained from the publisher of this magazine:—Mac Nair-Dorland Co., 254 W. 31st Street, New York 1, N. Y. Remit 50¢ for each copy. For orders received from outside of the United States send $1.00 per copy.

No. 2,937,997. Detergent Compositions Containing Carboxy-Esters of Hydroxybenzimidazolyl-Stilbenes, patented by Nathan N. Crounse, Cincinnati, assignor to Sterling Drug, Inc., New York. Revealed is a detergent composition comprising a detergent selected from the group consisting of water-soluble soaps, water-soluble non-soap synthetic organic anionic detergents, and water-soluble synthetic organic non-ionic detergents and dissolved therein 0.02–0.5% by weight of a carboxy-ester havng the structural formula



where R^1, R^2, R^3, and R^4 are radicals of the class consisting of hydrogen, lower alkyl containing 1–4 carbon atoms, lower alkoxy containing 1–4 carbon atoms, and halo, Z^1 is a radical of the class consisting of hydrogen, lower alkyl containing 1–6 carbon atoms, carboxy-lower alkyl containing 2–6 carbon atoms, cyano-lower alkyl containing 3–6 carbon atoms, allyl, methallyl, monocyclic aralkyl containing 7–11 carbon atoms, acyloxy-lower alkyl wherein lower alkyl contains 2–6 carbon atoms, 2-acyloxy-3-sulfopropyl, and acyloxy-oxaalkyl wherein oxaalkyl contains 3–15 carbon atoms, and Z^2 is a radical of the class consisting of acyloxy-lower alkyl wherein lower alkyl contains 2–6 carbon atoms, 2-acyloxy-3-sulfopropyl, and acyloxy-oxaalkyl wherein oxaalkyl contains 3–15 carbon atoms, said acyloxy being defined in each instance in the definitions of Z^1 and Z^2 by the formula

HOOC—A—COO—

where A is the residue of an acid of the group consisting of aromatic hydrocarbon-1,2-dicarboxylic acids and aromatic halohydrocarbon-1,2- dicarboxylic acids containing 8–20 carbon atoms, aliphatic hydrocarbon-1,2-dicarboxylic acids containing 4–22 carbon atoms, and cycloaliphatic hydrocarbon-1,2-dicarboxylic acids containing 7–8 carbon atoms.

No. 2,937,098. Liquid Polishing Composition Driable to a Bright Coating, patented by Henry C. Geen, Hinsdale, Ill., assignor to Simoniz Co. Described is a polishing composition driable to a bright surface without requiring buffing comprising: a continuous aqueous phase; a dispersed non-volatile, water insoluble solid film former capable of being deposited in a smooth bright protective film upon evaporation of the aqueous constituent of said aqueous phase; a small amount of a dispersing agent present in the aqueous phase in an amount sufficient to form a stable dispersion of the film former in the aqueous phase with this dispersion breaking down upon evaporation of the aqueous constituent of the phase to form a thin layer of the film former on a surface thereby depositing the film former in a smooth, bright, protective layer on said surface; and as a leveling agent about 0.0025-2% by weight of the composition of a fluoroalkyl compound having the formula

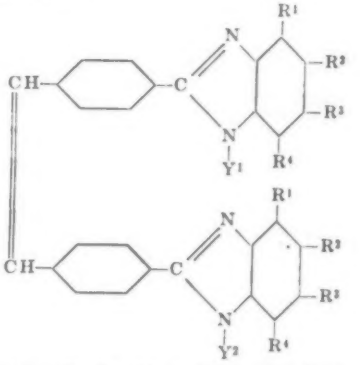
$$(C_aX'_{2a+1})_fZ$$

wherein a is a small number of 6–12, X' is a member of the class consisting of hydrogen and fluorine atoms with the groups $C_aX'_{2a+1}$ having at least 55% by weight of fluoride atoms, f is a small whole number of 1–8, and Z is a radical such that the compound $(C_aX'_{2a+1})_fZ$ is more water soluble than the compound $(C_aX'_{2a+1})_fH$, said dispersing agent being an agent other than said fluoroalkyl compound and being capable of dispersing said solid film former in the absence of said fluoroalkyl compound.

No. 2,937,428. Apparatus for Making Soap, patented by Adolphe Pocidalo, Cleveland, assignor to Des Fleurs, Inc., Cleveland. Patent claims an apparatus for forming a composite soap cake having an upper cake part and a lower cake part comprising means for successively forming a series of separate lower cake parts, means for feeding said lower cake parts serially to an assembly station and including a lower plate over which said means slidably moves said lower cake parts, means for successively forming a series of separate upper cake parts, means for feeding said upper cake parts serially to said assembly station, said last named means including an upper plate over which said last named means slidably moves said upper cake parts, said upper plate overlying said lower plate at said assembly station and having a through opening there permitting an upper cake part to drop down upon a lower cake part, means coordinating each upper cake part to move in timed relation to a lower cake part and to a position at said assembly station with said cake parts in vertical registration, and means at said assembly station for pressing said cake parts together while the latter are in registration.

No. 2,930,761. Hair Cleansing Composition, patented by Edouard J.-F. Charret, Caluire, France, assignor to Societe Monsavon-L'Oreal (S.A.), Paris, France. Claimed under this patent is a composition for cleansing live human hair comprising an aqueous solution of the dilactate of N - hydroxyethyl - N' - di(hydroxyethyl)-oleylamino-propylamine of pH 3.5 to 6.

No. 2,937,148. Detergent Compositions Comprising Benzimidazolylstilbene Whitening and Brightening Agents, patented by Nathan N. Crounse, Cincinnati, assignor to Sterling Drug, Inc., New York. This patent covers a detergent composition comprising a detergent selected from the group consisting of water-soluble soaps, water-soluble non-soap synthetic organic anionic detergents, and water-soluble synthetic organic nonionic detergents, and dispersed therein 0.02–0.05% by weight of a benzimidazolylstilbene having the structural formula



where R^1, R^2, R^3, and R^4 are radicals of the class consisting of hydrogen, lower alkyl containing 1–4 carbon atoms, lower alkoxy containing 1–4 carbon atoms, and halo, and Y^1 and Y^2 are radicals of the class consisting of hydrogen, lower alkyl containing 1–6 carbon atoms, hydroxy-lower alkyl containing 2–6 carbon atoms, 2-hydroxy-3-sulfopropyl, hydroxy-oxaalkyl containing 3–15 carbon atoms, carboxy-lower alkyl containing 2–6 carbon atoms, cyano-lower alkyl containing 3–6 carbon atoms, allyl, methallyl, and monocyclic aralkyl containing 7–11 carbon atoms.

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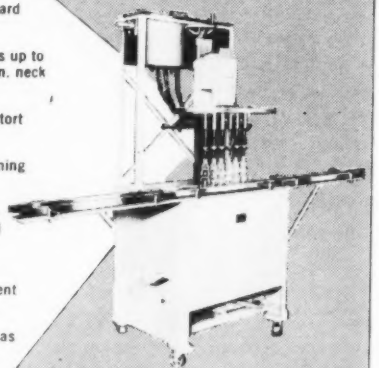

Simplicity of spout design enables quick dismantling and cleaning. Ertel specially designed spouts are known for their special seal and dripproof features. A unique arrangement provides for easy horizontal and vertical change over. Unit is foot pedal operated.

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products and processes

Waterless Hand Cleaners

Two basic formulations for waterless hand cleaners for the removal of heavily embedded grime, oil, grease, and stains are supplied by Antara Chemicals, Sales Division of General Aniline & Film Corp., 435 Hudson Street, New York 14:

	parts by weight A	B
Esso Solvent #5 (Esso Standard Oil)	—	58.0
"Bayol" 50 mineral oil (Esso Standard Oil)	43.5	—
"Igepal" CO 630, nonionic (GAF)	4.0	12.0
Oleic Acid	10.0	—
Monoethanolamine	1.0	—
Triethanolamine	3.0	—
Propylene glycol	4.5	—
PVP K-30	2.0	2.0
Water	32.0	24.0

Formulation A: With rapid stirring mix "Bayol" 50 and oleic acid. Dissolve amines in aqueous PVP. Stir in emulsifiers and propylene glycol and add slowly to oil phase with vigorous stirring.

Formulation B: Dissolve PVP in water and add to Esso Solvent #5 with vigorous agitation. Continue mixing while adding "Igepal" CO-630.

—★—

Novel Antiseptic Soap

A new process for adding a cationic to soap for antibacterial and antifungal effect, is revealed in an article in the July 6, 1960 issue of *Seifen-Oele-Fette-Wachse*. Attempts to formulate such combinations have so far been unsuccessful, since the hydrolytically liberated anion of the soap and the cation of the quaternaries neutralize each other's effect.

The author, Theodore Klug, claims that a modified cold saponification process has been found to provide the answer. An additive which inhibits hydrolysis of soap in aqueous solution also minimizes the effects of alkali usually released in the process. Additives are chosen so as to minimize destruction of the natural and protective microbiological flora of the skin, the article states.

Soap combined by this new process with quaternary ammonium compounds is said to have much greater foaming power and foam stability than conventional cold made coconut oil soap. Tests are reported by the author in support of his claim that the combination product has outstanding fungistatic and antibacterial properties as well as cutaneous mildness. Details of the processing method are the subject of a current patent application. The new soap product bears the trade name "Decomed."

—★—

New Nopco Emulsifiers

Two new emulsifiers, "Agrimul N4R" and "Agrimul N4S," were introduced recently by Nopco Chemical Co., 60 Park Place, Newark, N. J. Intended to be used together in insecticide formulations they are particularly suitable for thiophosphate concentrates, according to Nopco. Both are blends of nonionic and anionic surface active agents and are said to be mutually synergistic. By varying the ratio of one emulsifier to the other any thiophosphate concentrate can be successfully emulsified, according to the manufacturer.

Samples and information are available from Nopco's chemical specialties department.

—★—

Self Emulsifiable Wax

A new self-emulsifiable wax with melting point of 120°F. has just been introduced by Werner G. Smith, Inc., 1730 Train Avenue, Cleveland. Designated "Emulsifiable Hywax 122," the new product is composed essentially of myristyl, cetyl and stearyl fatty alcohol esters with chemically bound emulsifier. While these esters previously required considerable additions of emulsifiers, stable emulsions are easily formed by simply adding warm water to the melted "Hywax 122" and agitating, according to the manufacturer.

Suggested for use in chemical specialties, rust inhibitors, toilet goods, etc., the material forms permanent emulsions containing 90 to 95 per cent in neutral, acid or alkaline solutions, a creamy paste with 50 per cent water. Said to be free of odor, light in color, heat stable, it is not soluble in water.

—★—

Aerosol Pet Shampoo

An aerosol foam shampoo containing an insecticide intended for use as a dog shampoo may contain the following ingredients:

Part A	parts by weight
Stearic acid	100
Myristic acid	60
Oleic acid	100
Cetyl alcohol	3
Propylene glycol	607
"Pyrenone," pyrethrins/piperonyl butoxide (U.S.I.)	22
Part B	
Triethanolamine	150
PVP K-30	2
"Versene" regular, EDTA sodium salt (Dow)	8
Triethanolamine lauryl sulfate	1448
Water, distilled	485
Part C	
Perfume	15

Heat parts A and B separately to 70°C. until all ingredients are dissolved. Add B to A. Stir until cool and then perfume. Charge 90 per cent product with 10 per cent propellants 12/114 (40/60). (Formula suggested in *Pressurized Packaging (aerosols)*, by Herzka and Pickthall, Academic Press, Inc., 1958.)

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MAINTENANCE-SANITARY SUPPLIES is published by an organization which has "lived with" the sanitary and janitor supply trades for over thirty years. Its controlled circulation assures full coverage of the jobber market every month. Through its jobber salesmen, M-SS is a main sales artery between the manufacturer and industrial consumer. Every monthly issue goes to more than 6,300 separate jobbing and distributing firms.

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Shell manufactures more than thirty industrial chemicals—among them *allyl alcohol* and *allyl chloride*. Because of the di-functional nature of these two products, they are used as intermediates in the synthesis of many important chemicals. Derivatives of allyl alcohol are widely used in drugs and cosmetics. Allyl chloride is an intermediate in the synthesis of resins for thermosetting plastics, varnishes, and adhesives.

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Allyl Chloride
Bisphenol A
Epichlorohydrin
Ethyl Alcohol
Ethyl Amyl Ketone
Glycerine
Hexylene Glycol
Hydrogen Peroxide
Ionol® CP Antioxidant
Isopropyl Alcohol
Methyl Isobutyl Carbinol
Methyl Isobutyl Ketone
Tertiary Butyl Alcohol

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Branch Offices and *Stocks: Atlanta, Ga., Boston, Mass., *Chicago, Ill., Cincinnati, Ohio, Greensboro, N. C., *Los Angeles, Cal., Philadelphia, Pa., San Francisco, Cal., St. Louis, Mo., Montreal and *Toronto, Canada; *Mexico, D. F. and *Buenos Aires, Argentina. **Plants:** Clifton, N. J. and Buenos Aires, Argentina.

News...

PEOPLE · PRODUCTS · PLANTS

Baird & McGuire Elects

• • •

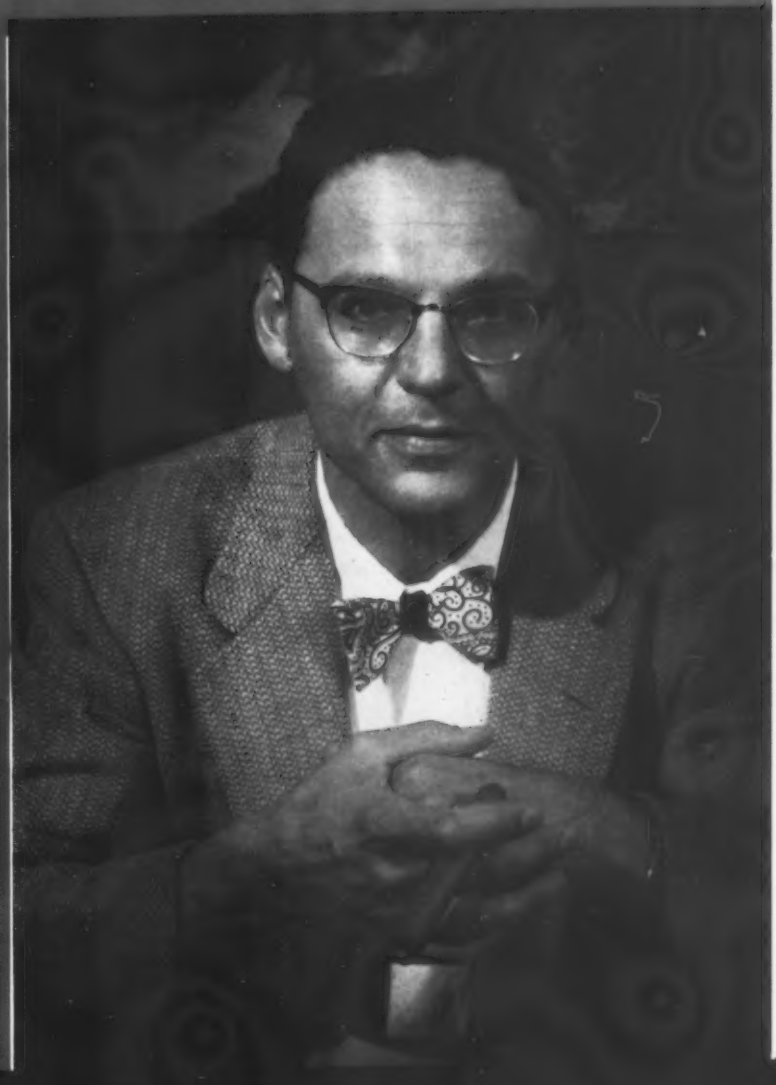
Pyrethrum Supplies Assured

• • •

Yardley Advances Brennesholtz

• • •

Climalene Names Carli



Earl Brenn, just elected president of Huntington Laboratories, Inc., Huntington, Ind., chemical specialties firm, succeeds his father, J. L. Brenn, who becomes chairman. Earl Brenn is a graduate chemical engineer, and has been with the firm since 1939. He is active in the affairs of CSMA, and is currently chairman of the Waxes and Floor Finishes Division. See story on page 157.

GIVE YOUR FLOOR POLISH

LONGER LASTING BEAUTY

WITH NEW

PETROLITE C-8500 WAX

After all, nothing polishes like wax.
With Petrolite C-8500 you can formulate high quality wax base floor polishes which provide very light-colored films that resist darkening on aging.

Petrolite C-8500 readily emulsifies with a greatly reduced concentration of oleic acid . . . as little as one-fourth the amount required with ordinary waxes. The final film thus has higher solids content, giving the floor a harder, tougher finish.

Learn how this new Bareco wax helps you deliver a superior product at lower cost . . . a floor polish that protects with the lasting, rebuffable gloss that *only wax can give.*

PETROLITE C-8500 WAX SPECIFICATIONS

Color, N.P.A.	3 Max.
Penetration at 77°F.	5/7
Melting Point, °F.	200/210
Acid Number	6.5/8.5
Saponification Number	25/35

Write for full information. A **FREE SAMPLE** *of Petrolite C-8500 Wax and a sample of our suggested emulsion made with it will be promptly furnished.*

POL-60-2

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DIVISION
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Gilbreath Chemical Co., 383 Brannan Street
ATLANTA, GEORGIA,
Atlantic Chemical & Equipment Co., 874 Ashby, N.W.

Fuhrman Brand Manager

Robert J. Fuhrman is now brand manager for "Angel Skin" cosmetics and "Seaforth" men's

Robert J. Fuhrman

toiletries lines of Chesebrough-Pond's, Inc., New York. Mr. Fuhrman is also assisting in the marketing and sales of new products.

The new brand manager has eight years of experience in the toiletries field with Procter & Gamble Co. Mr. Fuhrman started with P&G as a sales representative. For the six years before his current post, he was brand manager.

★

Mrs. Lillian Dodge Dies

Mrs. Lillian Sefton Dodge, former president of Harriet Hubbard Ayer, Inc., cosmetics manufacturers, died July 18 in New York. In 1938 it was revealed that Mrs. Dodge was the highest paid woman executive in the United States. Her salary was $100,000 a year.

Mrs. Dodge assumed control of the company when her first husband Vincent B. Thomas, then president of Harriet Hubbard Ayer, died in 1918. The company was not prosperous then, but under Mrs. Dodge's leadership it grew into one of the largest in the cosmetic field. During her presidency the company grossed as high as $8,000,000 a year.

In 1949 Mrs. Dodge sold the company to Lever Brothers Co., New York soap manufacturers, for $5,500,000.

★

SCC 1960 European Tour

The 1960 European tour and conference of the Society of Cosmetic Chemists began on August 19. The trip takes in the First Congress of Cosmetic Chemistry of the International Federation of Societies of Cosmetic Chemists to be held in Munich, and other technical meetings and social functions arranged by societies in nine cities.

★

Boyle Midway Vice-Pres.

William K. Eastman was named executive of the Boyle Midway division of American Home Products Corp., New York, according to a recent announcement by the parent company's president, William F. Laporte.

Mr. Eastman rejoined AHP in 1959. From 1951-1959 he was with Lever Brothers in the soap and detergents, toiletries, and foods divisions. Before that he was with the Whitehall Laboratories division of AHP for six years.

William K. Eastman

New Yardley Vice-Pres.

Louis L. Brennesholtz was appointed to the newly created post of vice-president of production

Louis L. Brennesholtz

of Yardley of London, Inc., New York, it was announced late last month by Philip C. Smith, president. Mr. Brennesholtz, who was elected to the board of directors in January, supervises production and distribution facilities of the American company.

Mr. Brennesholtz has been with Yardley for 13 years. He joined the firm in 1947 as a purchasing agent. His headquarters are at the main Yardley plant in Union City, N. J.

★

Louis Rosenberg Dies

Louis Rosenberg, 66, president of Lavo Co., Milwaukee soap firm, died June 28 in Phoenix, Ariz. He moved there in 1946 after he had sold the company and retired. He was president from 1920-1945.

A native of Milwaukee, he was graduated from the University of Wisconsin in 1914. He attended Harvard Business School, and later returned to Milwaukee to head a candy company. Later, Mr. Rosenberg headed the family-owned soap firm.

IN YOUR IMPROVED PRODUCTS . . .

Jefferson Polyethylene Glycols attend a shaving

His day begins surrounded by profitable applications for Jefferson Polyethylene Glycols. In the shaving cream, deodorant, hair preparation, electroplating of razor and water faucets, cellophane on cigarette pack, acetate yarn of his robe, ink and paper of the newspaper, and even as an herbicide that contributed to his orange juice. And long before five o'clock shadow time, his day will be touched by a hundred other products made better with polyethylene glycols.

Jefferson is an excellent source for industrial grade polyethylene glycols in molecular weights from 200 to 6000. U. S. P. polyethylene glycols 400 and 4000 are also available. You are assured of on-schedule deliveries in any quantity desired . . . tank cars or tank wagons, drums, or bags. For technical bulletins, samples, or specific help in the handling, storage, or applications of polyethylene glycols, depend on . . . Jefferson Chemical Company, Inc., 1121 Walker Avenue, P. O. Box 303, Houston 1, Texas.

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JEFFERSON CHEMICALS

002

Earl Brenn New Huntington President

EARL Brenn, vice-president in charge of sales, has been elected president of Huntington Laboratories, Inc., Huntington, Ind., chemical specialties firm. He succeeds his father, J. L. "Jake" Brenn, who has been elected to the newly created position of chairman of the board.

Two other new officers were elected by Huntington. Bernard S. Kroot, technical director, has been named vice-president in charge of research, and Hy Goldenberg becomes vice-president in charge of marketing. Mr. Goldenberg had been sales promotion and advertising manager until his elevation to the vice-presidency.

Other officers of the firm include Thomas P. Annan, secretary-treasurer and plant manager, and Hurley Feltman, vice-president and a key figure in the sales department. Both have been with the firm since 1922.

To Dunn continues as manager of the eastern division and as vice-president of the Crystal Soap division.

The new Huntington president is the only son of J. L. Brenn, who has in addition two daughters, Bernice and Lorraine, the wife of Hy Goldenberg, Earl Brenn joined Huntington in June, 1939, upon his graduation from the University of Michigan with a B. S. degree in chemical engineering. He spent the next seven years working out of the Huntington branch office in Denver, which happened to be the home town of his wife, Ruth, a classmate from Michigan University.

Bernard S. Kroot

In 1946, having become branch manager in Denver, Earl was transferred to Huntington, Ind., headquarters as sales manager. He was elected vice-president in 1950. When Huntington Laboratories acquired Crystal Soap and Chemical Co., Philadelphia, in 1953, Earl became president of Crystal, which serves as Huntington's eastern manufacturing center.

Currently chairman of the Waxes and Floor Finishes Division of the Chemical Specialties Manufacturers Assn., Earl Brenn has served as chairman of the Industrial Division of the Association of American Soap & Glycerine Producers. He was also a member of the board of directors of AASGP.

Bernard S. Kroot joined Huntington in 1940 upon his graduation from the University of Michigan, where he received a B.S. degree in chemical engineering. His first position with Huntington was as a lab technician. Later he engaged in technical service work for about five years. Following this he became technical director.

The new vice-president in charge of marketing, Hy Goldenberg, has been with Huntington Laboratories since 1946, starting in the order department. Later he was placed in charge of the sales office, eventually adding to his responsibilities advertising and sales promotion.

J. L. Brenn, president of Huntington Laboratories since 1921, joined the company on August 15, 1920, when the firm was known as Huntington Chemical Co. The present name was adopted in 1921. A graduate of Valparaiso (Ind.) University, where he received a B.S. degree, Mr. Brenn started his career in the sanitary products business by joining West Disinfecting Co. as a clerk in 1915. Three years later he left West to join U. S. Sanitary Specialties Co. in Chicago, as production manager and secretary of the corporation. From here he went to Huntington.

Hy Goldenberg

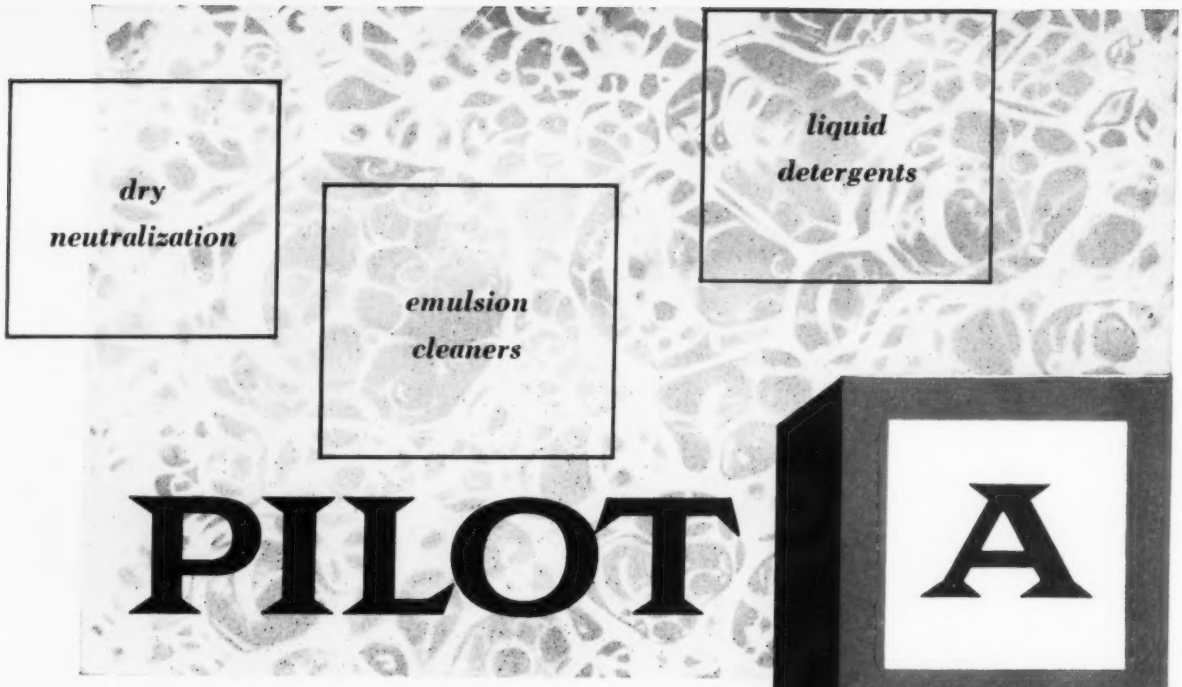
In his new post as chairman of the firm, Mr. Brenn will concern himself with policy and financial aspects of the business. A past president and member of the board of governors of the Chemical Specialties Manufacturers Assn., in the affairs of which he has taken an active part for many years, Mr. Brenn is also deeply interested in Rotary International. He is a past district governor of Rotary.

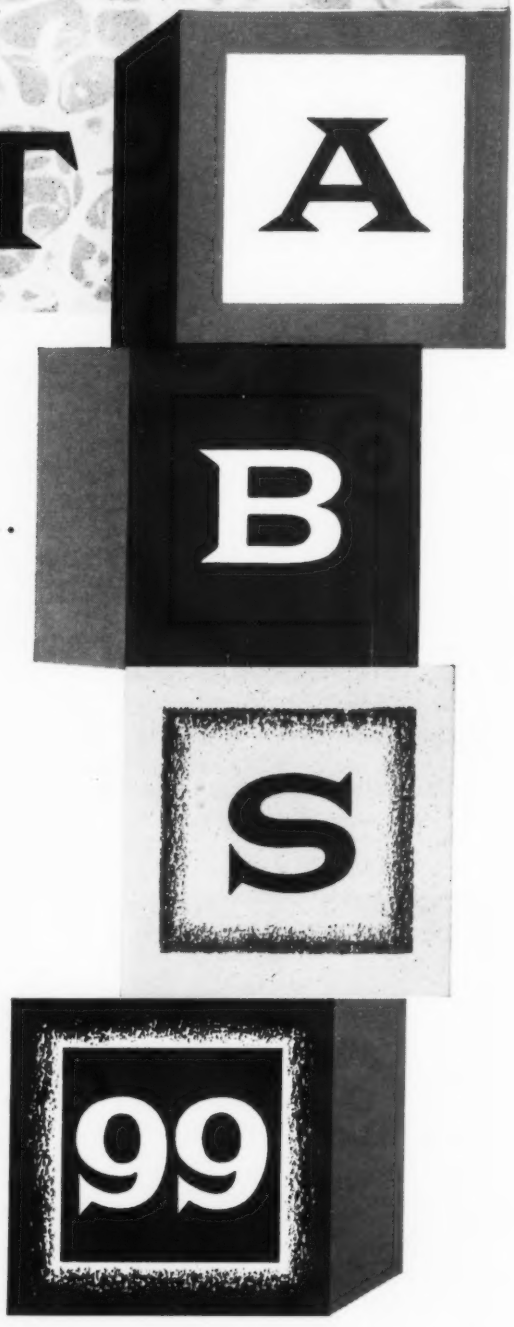
At 65, J. L. Brenn can look back on 40 years of strenuous activity on behalf of the defunct chemical specialties firm he revived and led to its present position. Although Huntington does not reveal its annual sales, it reports that sales have "approximately doubled" every 10 years for the last three decades. The firm has 72 salesmen at present. In addition to its two manufacturing operations in the United States, there is an associate company in Canada, Huntington Laboratories, Inc., with headquarters in Toronto.

★

D. H. Goldman Dies

David H. Goldman, founder and president of Zeen Chemical Corp., Cleveland, died last month. Zeen manufactures chemical cleaners for carpets, upholstery, and clothing.





The building block for all sulfonate detergents . . .

Pilot ABS-99, dodecyl benzene sulfonic concentrate, offers amazing flexibility for your detergent formulation: for direct neutralization of carbonate or bicarbonate mixtures to give dry compounds; can be mixed with a variety of bases and solvents for oil or water dispersable products; will form low sulfate liquids and pastes of light color for all-purpose liquid detergents; will form amine sulfonates which are directly soluble in oil, alcohol and non-aqueous media.

ABS-99 is made by Pilot's unique *Cold Processing* and gives 14% more active ingredient than ordinary 88% pure sulfonic concentrates. Detergent products can be made more efficient and manufactured at a lower processing cost by using highly concentrated Pilot ABS-99.

Because of its high purity, ABS-99 *may be kept in plain steel containers!*

Write now for technical information and sample.

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Packard Alumni President

Howard M. Packard, president and director of S. C. Johnson & Son, Inc., Racine, Wis., was re-

Howard M. Packard

cently elected president of the alumni association of Northwestern University for the term, 1960-1962.

Mr. Packard earned his B. S. degree from Northwestern in 1932. After law school graduation, he was associated with Marshall Field & Co., for eight years. He joined the Johnson company in 1946, and was named president in 1958.

—★—

Peskin Joins Fuld

Fuld Brothers, Inc., Baltimore, recently announced that Samuel B. Peskin is now a member of the sales staff, and is covering the New England territory. He succeeds Irving Morris, who is in semi-retirement while recovering from a heart condition.

Before Mr. Peskin joined Fuld, he was with the Butcher Polish Co., Boston, for five years, two of which as sales manager of the industrial division. Before his assignment Mr. Peskin participated in the indoctrination-training program conducted at Fuld offices in Baltimore.

—★—

Oakite Names Two

Daniel P. Brennan has been made New York technical service representative, and Daniel B. Lamb Detroit divisional manager, for Oakite Products, Inc., New York manufacturers of chemical compounds for industrial cleaning, sanitizing, and metal treating.

Mr. Brennan has been on the staff of Oakite's technical service laboratory since 1957. Mr. Lamb succeeds Thomas R. Smith, who retires after 19 years. Mr. Lamb joined Oakite as a technical service representative in 1957.

—★—

New Purex Headquarters

Purex Corp., Ltd., South Gate, Calif., announced that construction recently began on its new international headquarters in Lakewood Center, regional and business center in Los Angeles.

The first building of the headquarters has 62,000 square feet of space and accommodates 250 employees. Total cost of the entire project will approximate $5,000,000. Completion is set for the end of June, 1961.

—★—

New Dema Representative

David W. Robertson, formerly a sales representative for Kirby Sales Co,. Los Angeles, recently founded his own firm in that city caled Robertson Sales.

Mr. Robertson operates as a manufacturer's representative in the maintenance supply field. Currently he represents Dema Engineering Co., St. Louis designers and manufacturers of automatic dispensing devices. Headquarters of Robertson Sales are at 1238 S. Atlantic Blvd., Los Angeles 22.

—★—

Ammonia Odor Mask

The laboratories of Dodge & Olcott, Inc., New York, have developed a new line of odorants especially designed for the masking and rescenting of ammonia-based products, such as liquid cleaners. The new series has been named "Ammomasques."

Manufacturers may submit samples of their material to D & O. The perfuming materials firm returns the rescented product.

A brochure describing the new "Aromamasque" line is now available on request to Dodge & Olcott, Inc., 180 Varick Street, New York 1, N. Y.

Joins Colgate Manager

Colgate-Palmolive Co., New York, recently announced appointment of A. Carroll Jones, Jr., as

A. Carroll Jones, Jr.

product manager for dentifrices in the toilet articles division. He succeeds Joseph A. Deimling, who was made assistant to the general products manager, K. B. Arrington.

Mr. Jones supervises the advertising and marketing for "Colgate Dental Cream," "Colgate" tooth powders, "Colgate Chlorophyll" and "Brisk Activated" tooth pastes.

Mr. Jones comes to Colgate-Palmolive from the Benton & Bowles, New York advertising agency, where most recently he was an account supervisor.

—★—

MM&R Appoints Tamillow

Magnus, Mabee & Reynard, Inc., New York essential oils manufacturer, recently appointed Howard T. Tamillow to its Mid-western division's staff. He will report to Arthur R. Jensen, divisional manager, in Chicago. For five years Mr. Tamillow was maintenance superintendent of a large retail drug chain.

—★—

Credit Manager Appointed

Rohm & Haas Co., Philadelphia, recently appointed Wiley E. Arnold as general credit manager of the company, effective July 1. Mr. Arnold succeeds James C. Stretch who is leaving for another position.

An Advance in Stability

GIVAUDAN'S MENTHANYL ACETATE!

Menthanyl Acetate, Givaudan's new perfume ester, is the latest contribution to the development of stable perfumes for soaps, detergents and cosmetics.

Coupled with its unusual stability, Menthanyl Acetate has a clean, refreshing odor with good strength and body which makes it an ideal aromatic for many popular types of perfumes. Practical to use, domestically produced Menthanyl Acetate is moderately priced and readily available.

Although Menthanyl Acetate lends itself well to the creation of many bouquets, its use in artificial bergamot, petitgrain, and lavender is specifically suggested by its resemblance to linalyl acetate.

Samples and our technical data sheet are available upon request.

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.

321 West 44th Street
New York 36, N. Y.

Ginn Concord Sales Rep.

Concord Chemical Co., Camden, N. J., announced recently that James H. Ginn will serve as

James H. Ginn

sales representative for the greater New York and North Jersey areas. Mr. Ginn was previously with Sherwin-Williams Co., Inertol Co., and Steelcote Co.

He handles Concord's line of cresylic acid and cresols, industrial waxes, floor finishes and cleansers, soaps and cleaning compounds, textile chemicals and finishing compounds, and lubricants.

★

Fritzsche Officers

Election of officers by the board of directors of Fritzsche Brothers, Inc., New York, was announced last month. They are: John L. Cassullo, president; Frederick H. Leonhardt, Jr., vice-president; Ernest Guenther, vice-president; Edward E. Langenau, vice-president; Lidcay Herrera, vice-president for export operations; Julius P. Bauer, vice-president; Ellis F. Merkl, secretary and treasurer; A. J. Hemminger, assistant secretary; and E. C. D'Andrea, assistant treasurer.

At the same time it was announced that Julius P. Bauer has also been made director of the perfume division. Robert E. Brown, working directly under Mr. Bauer, directs the Fritzsche perfume laboratory.

Robert E. Brown

Julius P. Bauer

Monsanto Advances Two

Monsanto Chemical Co., St. Louis, recently appointed O. Lee Ryser assistant district sales manager of the Atlanta district. At the same time it was announced that William W. Low joined the sales staff as district sales manager for Louisiana.

Mr. Ryser joined Monsanto in 1958. Before his new appointment he was in the Chicago district sales office. Mr. Low has been with the division sales department since last year.

★

Daniels Joins Jefferson

Jefferson Chemical Co., Houston, Tex., recently appointed James V. Daniels as salesman for the eastern region. Jefferson is equally owned by Texaco, Inc., and American Cyanamid Co.

Before Mr. Daniels joined Jefferson, he was with Shell Oil Co. at its Houston and New Orleans offices.

New Midwest Velsicol Rep.

Velsicol Chemical Corp., Chicago, recently appointed Curtis N. Overton sales representative for

Curtis N. Overton

the agricultural chemicals division. His appointment provides additional technical service to customers in the mid-west.

Mr. Overton was formerly a technical sales representative for California Spray-Chemical Corp., Richmond, Calif.

★

Hagberg Joins Capital

Capital City Products Co., Columbus, O., recently announced appointment of Ralph A. Hagberg as sales manager of the fatty acid division.

Mr. Hagberg has 20 years of diverse experience in marketing fatty acids, oils and related products. He has been active in research and authored a number of articles in the fats and oils fields.

Ralph A. Hagberg

"Kan-Kil" Marketing Shift

Colgate-Palmolive Co., New York, announced recently that effective July 1 it had appointed food broker organizations throughout the United States to handle the complete line of "Kan-Kil" insecticides. This represents a departure from Colgate's usual method of distribution.

At the same time the firm revealed the Household Products Division had turned over control of "Kan-Kil" line to the Associated Products Division.

Raymond T. Connolly, with extensive experience in the grocery sales field, has been named product manager of the "Kan-Kil" line for the Associated Products Division. He supervises brokerage operations and the company's advertising and merchandising programs for the insecticides.

The "Kan-Kil" line includes perfumed, non-staining fly and mosquito killer in a 12-ounce pressure package, "House and Garden Spray" and "Ant and Roach Killer" both in 14-ounce aerosol containers. The latter product also comes in pint and quart bottles.

Raymond T. Connolly, left, product manager of Colgate Palmolive Co.'s "Kan-Kil" insecticide line, and Edward P. Field, Jr., vice-president and general manager of the Associated Products Division, turn over a can of the insecticide to Rodway Sales Corp. of New York in symbolically marking appointment of food brokers across the U. S. to handle "Kan-Kil" distribution. Receiving the aerosol insecticide are Jack Cooney, far right, president of Rodway Sales Corp. and Frank B. Medor, executive vice-president in charge of sales.

—★—

Stanley Advances Two

Appointments of Wilson Hutchinson as vice-president and director of sales, and James H. Allen, III, as general manager and board member of Stanley Home Products of Canada, Ltd., London, Ontario, were recently announced by Foster E. Goodrich, president of the parent company, Stanley Home Products, Inc., Westfield, Mass.

Wilson Hutchinson

Mr. Hutchinson joined Stanley as a dealer in 1935. He held several managerial posts until he became area sales manager in 1954. Prior to his appointment, he had been Canadian sales manager since 1958.

Mr. Allen came to Stanley in 1939 as a stockman in the company's Westfield distributing station. Serving in various posts, he was station manager in Westfield from 1950-1958. At the time of his current appointment, he had been manager of manufacturing and distribution in London, Ontario, since September 1958.

—★—

Climalene Advances Carli

Michael F. Carli, district sales manager for Linco Distributing Corp., Chicago manufacturer of liquid and dry bleach, detergents, and industrial cleaning products, was recently made assistant to G. H. Poorman, general sales manager of Climalene Co. Climalene purchased Linco June 1, 1959.

Mr. Carli joined Linco in 1927. He has been a dispatcher, a salesman, and since 1949, district sales manager. Mr. Carli continues to manage his mid-west districts.

Hercules Advances Four

Hercules Powder Co., Wilmington, Del., recently announced four managerial appointments in the naval stores department: C. E. McKay, sales manager of turpentine; R. S. Glover, Jr., sales manager of pine oils, terpene hydrocarbons, and related products; H. M. Winn, Detroit sales district manager; and D. F. Stauffer, Canadian technical service manager.

Mr. McKay joined Hercules in 1916. He has been a salesman, sales supervisor in 1942, and division sales manager in 1952.

With Hercules since 1933, Mr. Glover has held the posts of west coast sales district manager and manager of the Detroit sales district.

H. M. Winn joined the company in 1948. After several years at the Hercules research center at Wilmington, he became a technical sales representative for the naval stores department in 1954. In 1955 he was made senior technical sales representative. For the past two years he has been senior technical sales-service representative.

Mr. Stauffer's new post as manager of Canadian technical service is a newly created one. He has been with the firm since 1950 doing technical service and sales work.

SILICONE NEWS from Dow Corning

The Golden Touch!

That's What Silicones Add To Your Polish Sales and Profits

Dow Corning Silicones make polishes easier to use — faster to apply . . . quicker to shine-up . . . give a richer, deeper gloss. And because silicones resist weathering and oxidation, they just naturally last longer, provide greater protection.

These qualities mean polishes that please the consumer — a better product image for you. That's why you're wise to formulate your polish with Dow Corning Silicones . . . to feature "*Silicones*" on labels and in your advertising. When you do this you're developing brand loyalty and, at the same time, putting the extra touch of gold into your polish profits.

Dow Corning is a company formed specifically to concentrate its research in the field of silicone chemistry . . . to develop and produce these new materials to serve industry. That's why our chemists constantly work to provide polish manufacturers with the latest technical data and information on the use of silicones in polishes . . . to help you improve existing products or develop new polishes for the market.

Furthermore, conveniently located warehouses and prompt shipment of your silicone needs means Dow Corning is in the best position to help you maintain efficient inventory control.

Put yourself in her place and you'll formulate your polish with silicones.

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Coming soon from General Chemical!

NEW, Safer, Lighter, Smaller 13-Gallon Acid Carboy

cushioned with *expanded polystyrene* overpack

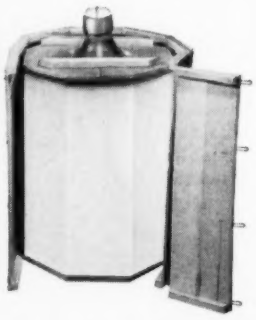
General Chemical packaging research has done it again! This time with a new carboy for 13-gallon acid bottles that has just won the 1960 "Best of Show" award from the Society of Packaging and Handling Engineers. Here is a commercial acid carboy that cushions the bottle completely with foamed-in-place *expanded polystyrene* . . . also has the added protection of an octagonal wire–bound wooden shell. Look at these outstanding advantages:

- **Safer!** New *expanded polystyrene* overpack resists shock . . . cushions bottle in shipping and handling.
- **Lighter!** 40% less tare weight.
- **Smaller!** Increases shipping and storage capacity by 30-35%.

This revolutionary new 13-gallon acid carboy is now going into expanded production and will be available soon from most production and stock points. Call your nearest General Chemical office for full details and information on availability in your area.

New Acid-Bottle Protection

Underneath the rugged, wire-bound wooden outer shell, inch-thick, foamed-in-place *expanded polystyrene* protects General Chemical's 13-gallon acid bottle.



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Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N.Y.

Continental Oil Advances Eight

CONTINENTAL Oil Co., Houston, Tex., announced late last month that J. G. Hough has been advanced to the post of

J. H. Hough

general manager of petrochemical sales. He succeeds H. P. Solem, who has been made executive vice-president of Refineria Panama, South America, a Continental affiliate currently building a refinery in Panama.

At the same time it was announced that seven men were advanced in the petrochemical sales department. Among them is S. W. Harris, formerly mid-west regional sales manager, who was appointed to the newly created post of sales manager. He is responsible for domestic sales of detergents, white oils and petrolatums, petroleum sulfonates, plastic intermediates, and oil-field products.

Also advanced were: V. F. Kavanagh, manager of detergents; A. J. Lacazette, manager of white oil and petrolatum sales; A. C. Kellermann, manager of petroleum sulfonates; R. S. Mooney, manager of plastic intermediates, a newly created position; R. T. Means, manager of oil-field sales; and D. F. McFarland, manager of advertising and promotion.

Mr. Hough joined Continental in 1947. He was general superintendent of petrochemical manufacturing before becoming assistant general manager of the petrochemical department in 1957. Prior to his current post, he had been manager of the department's chemicals division since 1958.

S. W. Harris

Mr. Harris, with Continental since 1952, was mid-west sales representative before becoming mid-west regional sales manager in 1957. Before that he was with Stepan Chemical Co., Chicago.

Announcement was also made that V. F. Beyer, manager of white oil and petroleum sulfonate sales, is retiring August 31. Mr. Beyer was one of the founding partners of Bryton Chemical Co., whose assets were sold to Continental in 1952.

—★—

CSMA Suppliers' Night

"Suppliers' Night" will replace the traditional "Open House" on Dec. 7 at the Chemical Specialties Manufacturers Association's 47th annual meeting to be held at the Hollywood Beach Hotel, Hollywood Beach, Fla. Similar arrangements were made in 1957 when CSMA held its 44th annual meeting at the Hollywood Beach Hotel, because there are not enough parlors to accommodate all firms wishing to participate in an "Open House."

A special suppliers' night committee was appointed. Headed by L. G. Cannella, Continental Can Co., as chairman, it includes the following members: T. R. Drinkwater, U. S. Industrial Chemicals Co.; E. E. Husted, Union Carbide Chemicals Co.; G. A. Petrie, Warwick Wax Division, Western Petrochemical Corp.; P. H. Sagarin, VCA, Inc.; and Jack Wittke, Oil Equipment Laboratories, Inc.

A general plan for the evening has been suggested by the committee: Each company contributing will be provided with ribbon badges to designate its representatives as hosts. If practical, all suppliers, and possibly all attending, will be furnished with name badges. A souvenir will be provided for each guest; there will be corsages for the ladies. Suppliers will invite all guests to a cocktail party before dinner. Additional features to be provided at dinner will include dance music by one or two orchestras. There will be entertainment during the cocktail hour. Funds permitting, ladies will receive special favors. Formal or theatrical type of entertainment is not planned at the moment.

At previous meetings 60 to 70 supplier companies have participated in "Open House" meetings. At least as many are expected by CSMA to contribute to the "Suppliers' Night."

To finance the cost each supplier member is asked to subscribe at least $200.00.

Appointment of John L. Frothingham as manager of technical service for the chemical division of Cowles Chemical Co., Cleveland, was recently announced. Mr. Frothingham was previously sales manager of the industrial chemical division of Pittsburgh Coke and Chemical Co. Prior to that, he was in the chemical business in the South, starting his own firm after discharge from the Navy in 1946. Before his service years he was with du Pont.

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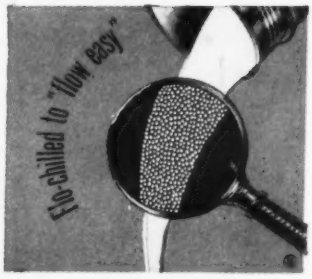

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Solvay Appoints Two

Two appointments were announced last month in the sales department of the Solvay Process

R. Lovatt H. R. Smith

Division, Allied Chemical Corp., New York. Ronald Lovatt was named manager of the calcium chloride section in the company's New York executive office. He succeeds H. R. Smith, who has been appointed assistant to the manager of the Syracuse sales branch. Mr. Smith will be responsible for the sales of calcium chloride, limestone, and salt in New York State.

Mr. Lovatt has been a Solvay employee since 1937. He served in various capacities in the New York office before joining the sales department in 1946 as a salesman in the metropolitan New York area.

Mr. Smith is a graduate civil engineer, and was soils engineer for the Indiana State Highway Commission before joining Solvay's technical service staff in 1936. In 1941 he transferred to the sales department as field service engineer and was appointed manager of the calcium chloride section in 1951.

★

Valchem Names Hargrove

Valchem, Langley, S. C., a division of United Merchants & Manufacturers, Inc., New York, recently announced appointment of Raymond W. Hargrove, Jr., to the position of sales manager. Valchem makes detergents and resins for the textile and paper industries and bulk cleaning and maintenance products for sales to industry and to jobbers in the South.

Mr. Hargrove comes to Valchem from Reichhold Chemicals, Inc., where he served as divisional sales manager in Charlotte, N. C.

SCC Seminar Details

The Society of Cosmetic Chemists will hold its 7th annual Cosmetic Seminar September 15-16 at the Drake Hotel, Chicago. Warren B. Dennis of Shulton, Inc., New York, chairman of the seminar committee has arranged a series of symposia on subjects of interest to cosmetic chemists.

The two-day meeting will be divided into three sections, each devoted to a discussion by authorities of topics of current interest. The subjects are: Sept. 15, "the biodynamics of the skin;" Sept. 15, afternoon, "coloring of hair;" and Sept. 16, "a new era in the analysis of cosmetics."

Registrations covering the full cost of the two-day meeting are $30.00 for members and $35.00 for non-members. Complete information can be obtained by writing Walter Wynne, Society of Cosmetic Chemists, 2 East 63rd St., New York 21, N. Y.

★

New IFF Executives

The election of four vice-presidents of International Flavors & Fragrances, Inc., New York, was announced recently by Charles P. Walker, president. The new officers are Alec J. Dedrick, Ernest Shiftan and Fred W. Webster, all former vice-presidents of the company's van Ameringen-Haebler Division in New York, and Henri G. van Mameren, recently appointed general manager of the flavor division

Alec J. Dedrick

located at Elizabeth, N. J.

Mr. Dedrick and Mr. Webster have long been identified with the fragrance industry in sales and marketing activities. Mr. Shiftan, who is well known here and abroad, serves as chief perfumer of IFF's creative laboratories throughout the world.

According to Mr. Walker, the appointments will further consolidate corporate activities in both the flavor and fragrance divisions of the company.

★

Newport Technical Director

E. C. Slaght, Jr., was recently appointed technical director and assistant to the president of Newport Industries Co., division of Heyden Newport Chemical Corp., New York. Mr. Slaght organizes and coordinates Newport's expansion and new product programs.

Soapers on Bank's Board

Howard J. Morgens, president of Procter & Gamble Co., Cincinnati, and Carl J. Gilbert, chairman of Gillette Co., Boston, were elected directors recently of Morgan Guaranty Trust Co. of New York. Mr. Morgens is also a director of Owens-Corning Fiberglas Corp. and Mr. Gilbert has been a member of Morgan Guaranty's directors' advisory council.

★

Allied Ups Two

L. W. Seigle is now manager of chemical development for Allied Chemical's National Aniline Division, it was recently announced. In the new post, Dr. Seigle is responsible for introduction and commercial development of new chemical products.

The new manager joined National Aniline's research staff in 1936. For the next 14 years he served in various capacities engaged in exploratory research. In 1953 he shifted from research to marketing, and in 1959 was named assistant to the director of chemical sales.

At the same time it was announced that James P. Nolan was made manager of organization development for National Aniline. Mr. Nolan is assisting in increasing the effectiveness of supervisory and staff personnel.

He was formerly training manager and assistant to the vice-president in the public relations department of Oxford Paper Co.

Ernest Shiftan

Henri G. van Mameren

Fred W. Webster

Reassures on African Pyrethrum Supplies

LONG range activities to assure a stable and increasing production of pyrethrum for the American insecticide market were described in conferences with American pyrethrum refiners during a recent visit to the United States by the principal spokesman for this industry.

D. H. Pell-Smith, chairman of the Pyrethrum Board of Kenya, and an agricultural producer for 40 years, devoted the month of May to conferences in this country and in Europe. Mr. Pell-Smith was one of the pioneers in developing the cultivation of pyrethrum in Kenya.

Mr. Pell-Smith was asked repeatedly what possible effect the political changes in Africa—including newly gained independence of the Congo and Tanganyika, and anticipated independence for Kenya—might have on this vital source of American supplies of pyrethrum.

His reply, in substance, follows:

"As clearly as anyone can foresee, the pyrethrum industry will continue to meet its world commitments regardless of political developments in Kenya. There are ample evidences that our feelings are shared by those abroad who study African movements closely for business reasons.

"An independent Kenya run by a native government, as their leaders know, would do everything possible to foster agriculture of all types, as this is the mainstay of the modern Kenya economy. It is noteworthy that in recent weeks a banking group in the British Commonwealth has made to the Pyrethrum Board a long-term loan of $1,000,000 to finance construction of additional crude extraction facilities.

"The only real security for this and other foreign credits is a long-range stability in pyrethrum production creating the revenues from which such commitments can be paid."

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For complete information on the new Olin Mathieson propylene polyols — or helpful technical assistance, write to Olin Mathieson.

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MGK Stock Spray Data

A dairy stock spray bulletin has been published recently by McLaughlin Gormley King Co., 1715 S.E. Fifth Street, Minneapolis 14. Common insect pests of cattle are described and shown in schematic drawings. Work demonstrating production losses caused by insect attacks upon dairy cattle is reported. Main part of the publication is devoted to MGK products for dairy cattle control, including the firm's "Cow-Tent" repellents.

Extensive data are presented on formulations combining repellents with pyrethrins and synergists. Information on methods and equipment for application of sprays, mists, and other forms of insect repellent and insecticidal compounds are included.

Copies of the paper bound mimeographed publication are available from MGK.

News about

B.F.Goodrich Chemical *raw materials*

This new after-shave lotion provides a non-oily, non-greasy lotion with talc suspended in the formulation by Carbopol 934. It provides a two-in-one treatment—gives the same effect as applying talcum powder separately after applying lotion.

This suspension of talc in a water-alcohol base demonstrates the advantage you can get by using Carbopol water-soluble resins. You can vary the viscosity by varying the concentration of Carbopol—for example, 0.5% Carbopol produces stable suspensions with high viscosities, 0.3% Carbopol provides stable suspensions with low viscosity. And the suspension is permanent—making possible the squeeze-type bottle packaging used for this two-in-one after-shave lotion.

Carbopol water-soluble resins may be the answer to your need for improving a product or developing products for new markets. For information and samples, write Dept. JD-4, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

"GRIN with the talc built in" is manufactured using Carbopol 934 by The Barbasol Company, Indianapolis, and is on sale at drug stores and cosmetic outlets everywhere. B.F.Goodrich Chemical Company supplies the Carbopol 934 water-soluble resin.

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HOOKER CHEMICALS PLASTICS

Baird & McGuire Officers

New officers were elected recently at a meeting of the board of directors of Baird & McGuire, Inc., Holbrook, Mass., manufacturers of insecticides, weed killers, disinfectants, and other chemical specialties. Gordon M. Baird, president, was elected board chairman. His brother, Cameron M. Baird, is the new president and treasurer. Also elected were: Ralph E. Hamilton as vice-president, and Thomas J. Tracy, Jr., as secretary.

Cameron Baird

Ralph Hamilton

Gordon Baird is the eldest son of one of the co-founders, C. C. Baird, and has been associated with the firm since 1932. He has been president since 1940. Active in the Chemical Specialties Manufacturers Association for many years, he served as president in 1948 and 1949 when it was known as the National Association of Insecticide and Disinfectant Manufacturers, Inc. Currently he is chairman of the association's policy advisory committee.

Cameron Baird joined the firm in 1951, and is a member of the educational committee of the Insecticide Division of the CSMA. Mr. Baird has an M.S. degree from Norwich University.

Mr. Hamilton, formerly research director, has been with Baird & McGuire for the past eight years. He is a member of the scientific committee of the Soap and Detergent Division of CSMA. He is the brother of H. W. Hamilton, for many years secretary and now executive vice-president of CSMA.

Thomas J. Tracy, Jr., the new secretary, joined the firm in 1957. Previously he was a certified public accountant with a New England accounting firm.

Baird & McGuire was established about 50 years ago and distributes its products nationally and in Central and South America and the Far East as well.

—★—

Hartley D&O Vice-Pres.

Appointment of Kenneth W.. Hartley as vice-president and sales manager of Dodge & Olcott, Inc., New York, 161 year old essential oils and perfuming materials firm, was announced last month. Mr. Hartley has been a member of the D&O sales staff since 1949 and in 1951 was appointed manager of the Chicago branch office.

Kenneth W. Hartley

Gribou Dragoco President

Appointment of Dr. Henry G. Gribou as president of Dragoco, Inc., New York aromatic chemicals firm, was announced last month. For the past four years, Dr. Gribou has been executive vice-president of the company.

Henry G. Gribou

Aerosol Colognes

(*From Page* 135)

than 1000 samples of both aerosol and conventional products to a consumer panel of 150 women. Panel members used the products, one sample at a time for a full day, and then commented on them. An analysis of the comments is presented in the article.

The major disadvantage reported was that aerosols presented something of a fire hazard. It was found that every one of the 25 aerosols tested flashed on contact with an open flame, whereas none of the atomized products did. Two other difficulties noted were occasionally faulty packages – encountered with any brand, and a general tendency of the uninitiated to apply too much fragrance; only two brands avoided this by the use of a metered container.

Price differences between aerosols and conventional products, generally, were found to be moderate in all except a few cases. Where the difference was slight, CU recommended the aerosol's superior convenience and efficiency as a good buy.

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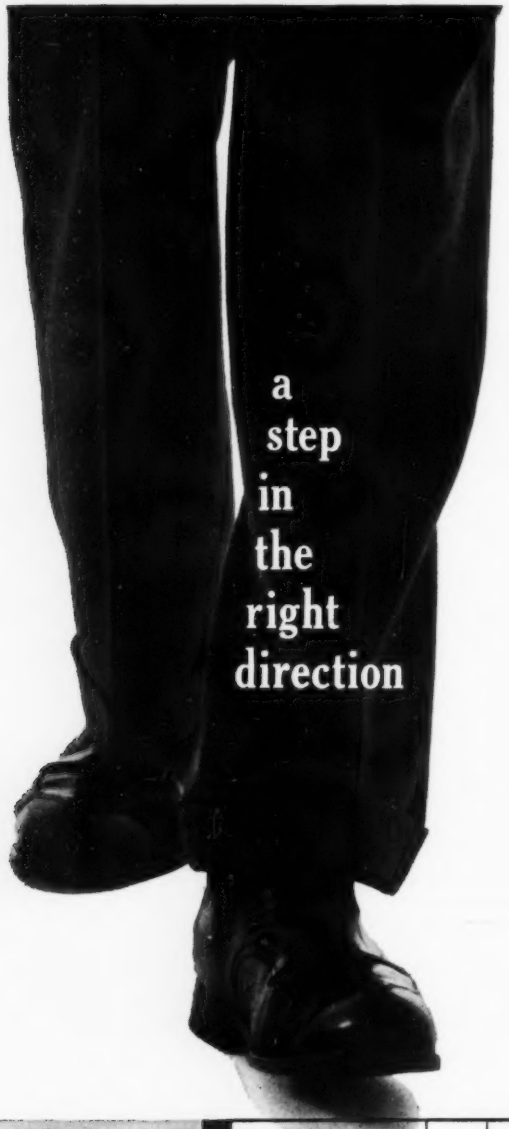

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properties of SC aromatic solvents

PRODUCT	Initial °F.	Dry °F.	Dry °C.	Flash Point °F. (Closed Cup)	Speed Evap. Min.	Kauri Butanol Value	Aniline Point °F.	Specific Gravity @ 60°F.	Lbs. Per Gal. @ 60°F.	Aromatic Equivalent Content
SC Solvent #1	211	240	116	30	2.5	86.4	+ 1	.8259	6.88	74%
SC Solvent #1-A	202	235	113	25	2.5	67	+48	.8003	6.66	52%
SC Solvent #2	270	308	153	81	14.0	80	— 2	.8418	7.01	76%
SC Solvent #2-B	277	370	188	81	21.5	75	+12	.8388	6.99	68%
SC Solvent #3	356	400	204	135	64.0	72	+24	.872	7.26	69%
SC Solvent #28	329	379	193	122	51.0	73	+14	.8597	7.16	74%
SC Solvent #100	321	351	177	115	21.0	93.2	—37	.8708	7.25	96%
SC Solvent #150	369	412*	211*	152	98.0	91.8	—26	.8899	7.41	96%
SC Solvent #450	450	588*	309*	212	750	73	+10	.9279	7.73	

*End Point

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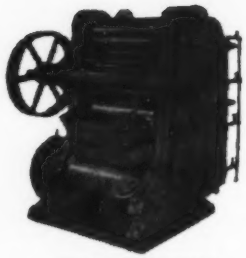

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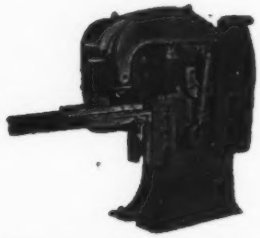

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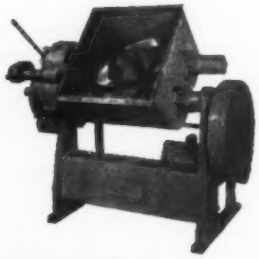

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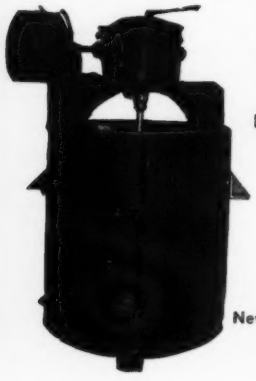

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(*Continued on Page* 177)

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(*Continued on Page* 178)

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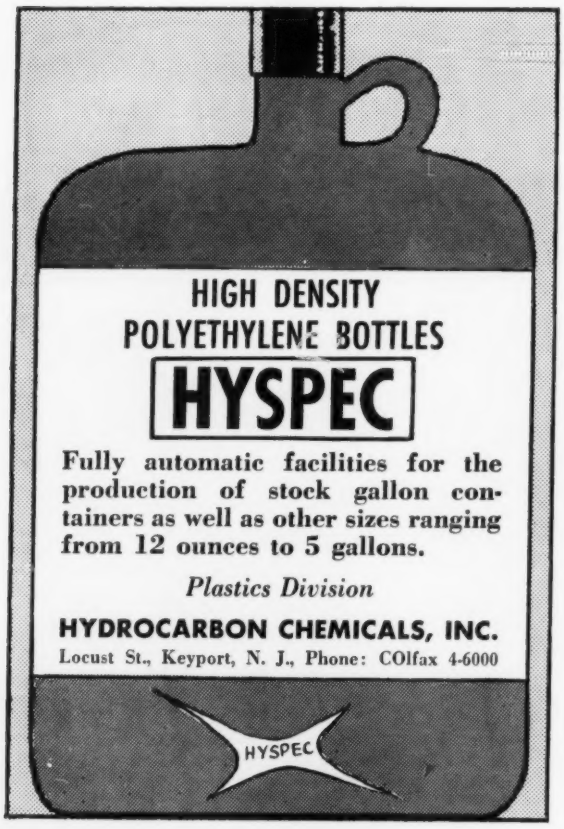

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TGA Ponders

(*From Page* 59)

ries will show a gain of 48 percent from 1959-69.

A panel discussion of "Toiletry Merchandising Trends" highlighted the second portion of the session. Six representatives of major toiletries marketing outlets participated. C. R. Keeley, vice-president, *Beauty Fashion* magazine, was moderator.

Preston J. Beil, editor and publisher of *Variety Store Merchandiser magazine*, representing the variety store field, predicted that by the end of the 1960's "strongly financed variety chains with 10 more years of aggressive expansion of both merchandise lines and floor space will be the dominant retail store in thousands of smaller and medium sized towns and cities."

A house-to-house seller, Norman C. Chadwick, vice-president in charge of merchandising and sales promotion for Avon Products, Inc., New York, foresaw continued growth and substantial sharing in the growth of the toilet goods industry, particularly in the teen age field.

As spokesman for the supermarket field, J. B. Brewer, executive director of the Toiletry Merchandisers Association, estimated that by 1969 there will be a 150 per cent increase in food store sales of toiletries.

In 1970 there will be twice as many chain drug stores with a minimum of over 50 million additional square feet of floor space as there are at present, according to Harry J. Towers, executive vice-president, Associated Chain Drug Stores, who represented the chain drug store field.

As spokesman for the department store field, James J. Moyer, cosmetic buyer for Lord & Taylor, New York, saw in his crystal ball fewer, but larger department stores, with many having branches from coast to coast and all selling twice as many cosmetics . . . 100 per cent more cosmetic business with fewer lines.

H. H. Henley executive vice-president of McKesson & Robbins, Inc., New York, as spokesman for the wholesale-retail field prognosticated that in 10 years the American drug store is going to be a "bigger and better place in which to shop," with an average annual sales volume of $250,000, against today's $123,000.

The 1962 annual meeting of the Toilet Goods Assn. will be a joint one with the Canadian Toilet Goods Manfuacturers Assn. The meeting will be held June 24-29 at the Chateau Frontenac Hotel, Quebec.

Panelists and moderator for "Toiletries Merchandising Trends", l. to r.: Preston J. Beil, editor and publisher, Variety Store Merchandiser; James J. Moyer, cosmetics buyer, Lord & Taylor; J. B. Brewer, executive director, Toiletry Merchandiser's Assn.; Harry J. Towers, executive vice-president, Associated Chain Drug Stores; Norman C. Chadwick, vice-president, Avon Products, Inc., and C. R. "Bud" Keeley, vice-president, Beauty Fashion.

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COMING MEETINGS

American Oil Chemists Society, fall meeting, New Yorker Hotel, New York, Oct. 17-18.

Association of American Soap & Glycerine Producers, 34th annual convention, Waldorf-Astoria Hotel, New York, Jan. 25, 26 and 27, 1961.

Canadian Agricultural Chemicals Association, Britannia Hotel, Lake of Bays, Muskoka, Ont., Sept. 12-14.

Canadian Manufacturers of Chemical Specialties Association, 3rd annual convention, Queen Elizabeth Hotel, Montreal, Oct. 24-26.

Chemical Specialties Manufacturers Association, 47th annual meeting, Hollywood Beach Hotel, Hollywood, Fla., Dec. 3-9.

Chemical Specialties Manufacturers Association, first annual mid-western golf outing, Medinah Country Club, Medinah, Ill., Sept. 20.

Drug, Chemical & Allied Trades Association, 70th annual meeting, Sagamore Hotel, Bolton Landing, N. Y., Sept. 15-18, 1960.

Industrial & Building Sanitation-Maintenance Show and Conference, Sheraton-Cadillac Hotel, Detroit, Oct. 24-27.

International Congress of Surface Activity, Cologne, Germany, Sept. 12-17.

National Agricultural Chemicals Association, annual meeting, Del Coronado Hotel, Coronado, Calif., Sept. 27-29.

National Auto Accessory and Parts Exhibit, Las Vegas, Nev., Sept. 12-15.

National Packaging Exposition and Conference, Exposition Center, Chicago, April 10-14, 1961.

National Pest Control Association, annual meeting, Hotel Mayo, Tulsa, Okla., Oct. 17-20.

National Sanitary Supply Assn., 38th annual convention, Conrad Hilton Hotel, Chicago, April 23-26, 1961.

New York Premium Show and Premium Advertising Conference, Hotel Astor, New York, Sept. 12-15.

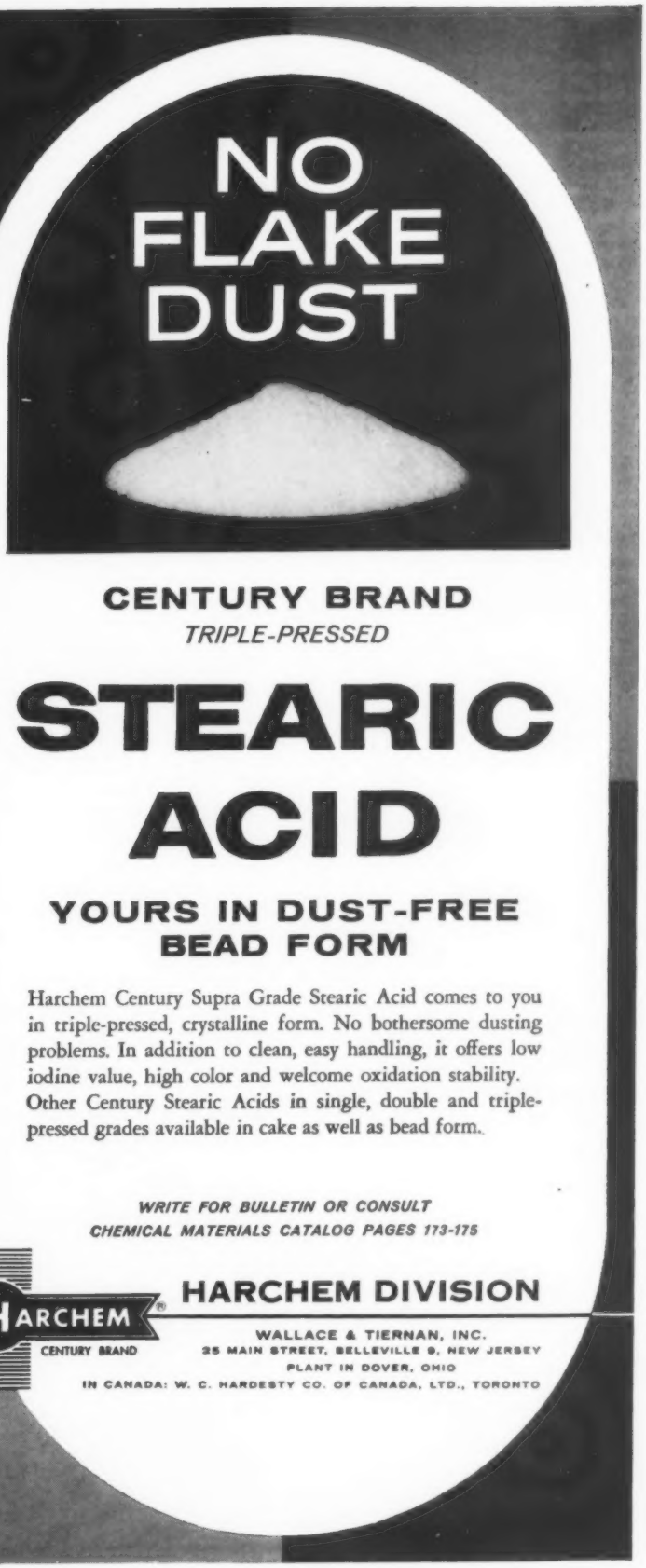
Packaging Institute, 22nd seminar, Statler Hilton Hotel, New York, Oct. 31, Nov. 1, 2.

Packaging Machinery Manufacturers Institute, (PMMI) fourth annual show, Cobo Hall, Detroit, Nov. 7-10, 1961.

Society of Cosmetic Chemists, Chicago Chapter, Oct. 11, Nov. 8.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meeting, Roosevelt Hotel, New York, Sept. 13, Oct. 11, Nov. 10; annual meeting and annual dinner, Dec. 8.

Toilet Goods Association, 26th annual meeting, Waldorf-Astoria Hotel, New York, May 9-10-11, 1961.



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tale ends

IN the August issue of the "Journal of the American Dental Association, a very favorable report on "Crest" toothpaste, Procter & Gamble's fluoride dentifrice, was published. News of this report leaked into Wall Street on August 1 and there were real fireworks in P & G stock. Price of the stock on the New York Stock Exchange zoomed up eight points for the day closing at 126. "Crest" was termed "an effective anticaries dentifrice" in the report of the Council on Dental Therapeutics of ADA.

It was no dough in reward money for a Long Island youth who found an envelope containing $3,000 that belonged to Irving Bottner, president of Esquire Shoe Polish Co., Brooklyn. The youth turned over to the police the money which Mr. Bottner said he had lost on a business trip. The boy's mother turned thumbs down on a cash reward of $250 offered by Mr. Bottner, but allowed as how the youth might buy a gift and bill Mr. B. The boy's father is president of a large distilling corporation.

* * * * *

Insect repellent "Delphene," which is very unappetizing to mosquitos, gnats and other "man-eating" insects, will not repel people, we are told by an entomologist at the University of Delaware. Actually, says Dr. Dale F. Bray, the stuff receives a favorable reaction from most people. So, if you're expecting a visit from your mother-in-law don't douse yourself with "Delphene," it could be troublesome. For bugs, yes; for people, no, the good doctor advises.

* * * * *

William J. Weed, v.p. of Mantrose Corp., New York, shellac refiners of note, and former v.p. of Niagara Alkali, is — we just found out recently — the owner of a two-engine Apache airplane which he uses to flit about the country on business. He's owned it for a year, we are told. Says this "highest paid shellac salesman in America," the airplane is a necessary adjunct of modern business. Will modern wonders never cease!

* * * * *

The average store carries from 60 to 100 brands of packaged detergents, liquid and powder, and they represent the most highly competitive merchandise in the store, according to the annual Grocery Executive Edition of "Chain Store Age." "The variety of important brands and the size of the market have helped make detergents one of the most competitive items in the store." Some of our friends in Washington, D. C. should make a note of this!

* * * * *

"WDTROHLL?" is not a new spelling for a wolf whistle. It simply means "What does the rest of her look like?" This was a question asked of the ad

manager at Stepan Chemical Co., Chicago, when an advertisement of his firm appeared in the July issue of "Soap & Chemical Specialties" featuring just the gal's eyes. Thus the picture of Miss Joyce Cole, described by said ad man as "a charming, tall, slender red head." To merchandise their "Maypons" anionic protein-based detergents Stepan is supplying its salesmen with photos of the gal.

* * * * *

H. W. Schaefer, a v. p. of Philco Corp. sees waterless clothes washing in the home a reality by 1970. The company is now working on waterless washers in the laboratory. But the key to the problem depends first on the correct solution to use and second on finding a way to reclaim and redistill the solution for further use. Why not a neat little still in every cellar that could be used on non-wash days for making up a bit of booze? A real two-in-one piece of equipment.

* * * * *

The brewers, Anheuser-Busch of St. Louis, are suing the Chemical Corp. of America in Federal Court at Tallahassee, Fla. on account of they don't like the slogan which the chemical company is using for its insecticidal floor wax, "Where there's life, there's bugs!" Pretty clever slogan, we thought. But A-B have used the slogan for years for their Budweiser beer, "Where there's life, there's Bud!" And they don't like this bugs business!

COLOR LINE: Dr. Samuel I. Zuckerman, seated, center, vice-president and technical director of H. Kohnstamm & Co., New York, discussed new government regulations on the use of color in lipsticks at the July meeting of Cosmetic Industry Buyers & Suppliers Association (CIBS). With him are, l. to r., seated: Lamson Scoville, Scoville Mfg. Co., CIBS president; and Arthur Vogel, vice-president of Kohnstamm. Standing, l. to r.: Dallas Roush, Owens-Illinois Glass Co.; Harold Anderson, manager of cosmetic sales for Kohnstamm, and Robert Ring, Hewitt Soap Co., CIBS v.-p.

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